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Site Trial of Gel-clear condensate drain tablets.

Carried out with OEM & FM Contractor to reduce biofilm related drainage maintenance in cold chain & food retail refrigeration in Hong Kong.

7/12/18 - 7/12/19

Remit

We were approached by an OEM supplying food retailers in Hong Kong in 2018.

Biofilm in the refrigeration chiller cabinet drainage was causing a high number of breakdowns requiring engineer attention.

In Hong Kong, installation warranty periods last for 2 years, and are often fully comprehensive.

A comprehensive breakdown warranty for two years would usually include any drainage related breakdown.

The high number of drainage related breakdowns in the first two years of installation were having a massive cost impact for the OEM.

For the purpose of demonstration, several live sites were chosen to install Gel-clear QP34 one year tablets in the condensate pans to prove efficacy in the prevention of biofilm drain blockages.

The retail locations were in the Sham Shui Po district of Hong Kong

Fan coil units in food processing facilities were also selected to test the Gel-clear AHU60 one year condensate drain tablet for cold room evaporator units.

Atmospheric factors affecting biofilm in condensate drains Hong Kong

Biofilms originate from airborne microbes circulating in the chiller cabinet air supply. As such the condition of the air is relative to the biofilm in the drainage.

Population density

Hong Kong has 6300 people per square Km² compared to Europe's average 250 people per Km² in cities. A 25 fold increase in population density is a much more challenging environment, population density being directly linked to the amount of 'human traffic' airborne biofilm secreting microbes.

Ambient humidity

Hong Kong has a much higher humidity level compared to Europe or North America. The atmospheric humidity containing airborne microbes, increasing the microbial air contamination rate of chiller air exchange.

Air quality levels

Hong Kong has a NO₂, PM₁₀ and PM_{2.5} count that is marginally higher than Europe/ N, US Airborne particulate matter contains nutrient to feed the biofilm stimulating growth and survival.

The trial presented Gel-clear with an opportunity to test the tablets in the most extreme operational environmental conditions.

Operational Trial

The tablets installed directly into the condensate pan during live trade. The units were not cleaned or prepared in any way.



The QP34 tablets were installed as prescribed for UK food retail, one tablet per unit.

No units were cleaned.

No chemicals can be used cleaning cabinets in Hong Kong.



Results

The sites were observed for the trial period by the contractor, recording any drainage related breakdowns. An assessment was carried out by the

contractor at 6 months, and a report prepared. Upon completion of the 12 month period, a concluding assessment was carried out, a report returned.

Hi, Paurick

Thank you for your kindly support.

We took three trials for the Gel Clear, two for refrigerator in supermarket and one for cold room big evaporator.

For two refrigerator trials in supermarket, both refrigerators we didn't receive any drain blockage occurrence again after we placed the tablets. For tablets condition, one of the both trials, the tablets look like have already totally dissolved and another supermarket has already closed and the refrigerators have been also disposed a serval months ago.

For cold room big evaporator trial, we also didn't receive any drain blockage occurrence after we placed the Gel-Clear tablets. The placed tablets look like have already totally dissolved.

Best regards,

Henry Chui - Carrier UTC

The 12 month report from the contractor recorded that they had experienced zero drain blockages since the installation of the tablets on the food retail display chillers using the QP34 tablet, or on the evaporator units in the food processing facilities using the AHU60 tablets.



The trials were deemed very successful and the tablets are now used by Carriers refrigeration contractor the contractor D-Logic. (SG)

OEM

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