



PAT³ Sanitization test in a manufacturing plant

Objective of the study

Evaluate the capacity of PAT3 dry fog sanitization treatment to perform in a high-volume industrial building with ceiling height around 9 meters.

Test description

During standard manufacturing plant activities, a microbial load measurement campaign has been conducted in n°15 different locations. The load of bacteria and mold on surfaces has been evaluated by Agar microbial culture in Petri dish at the end of working day.

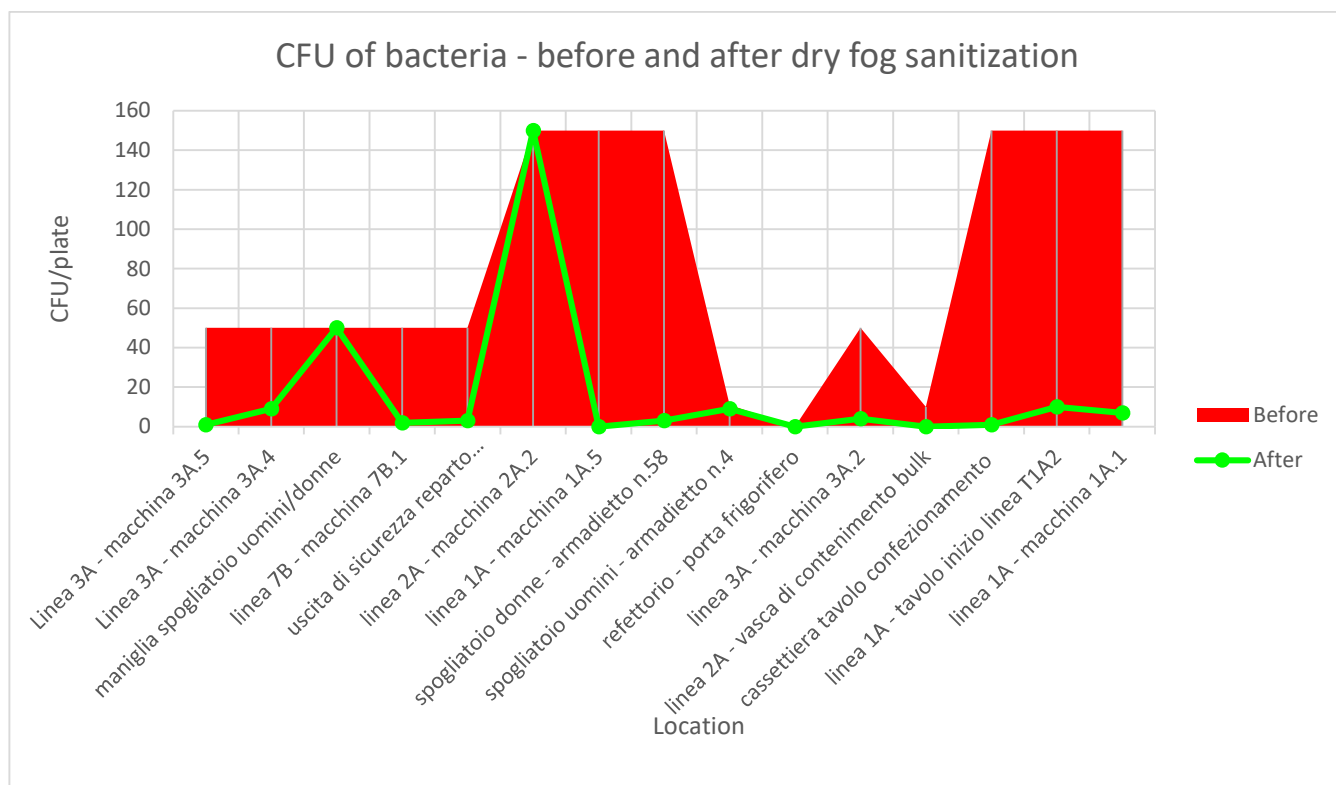
During night time PAT3 dry fog treatment was activated for a hypothetical volume of 1500 cubic meter, considering to treat only up to 2,5meter height of the building since it was not possible to treat the full 5000cubic meter volume.

The morning after, the same n°15 locations have been tested again to check the result of the treatment.

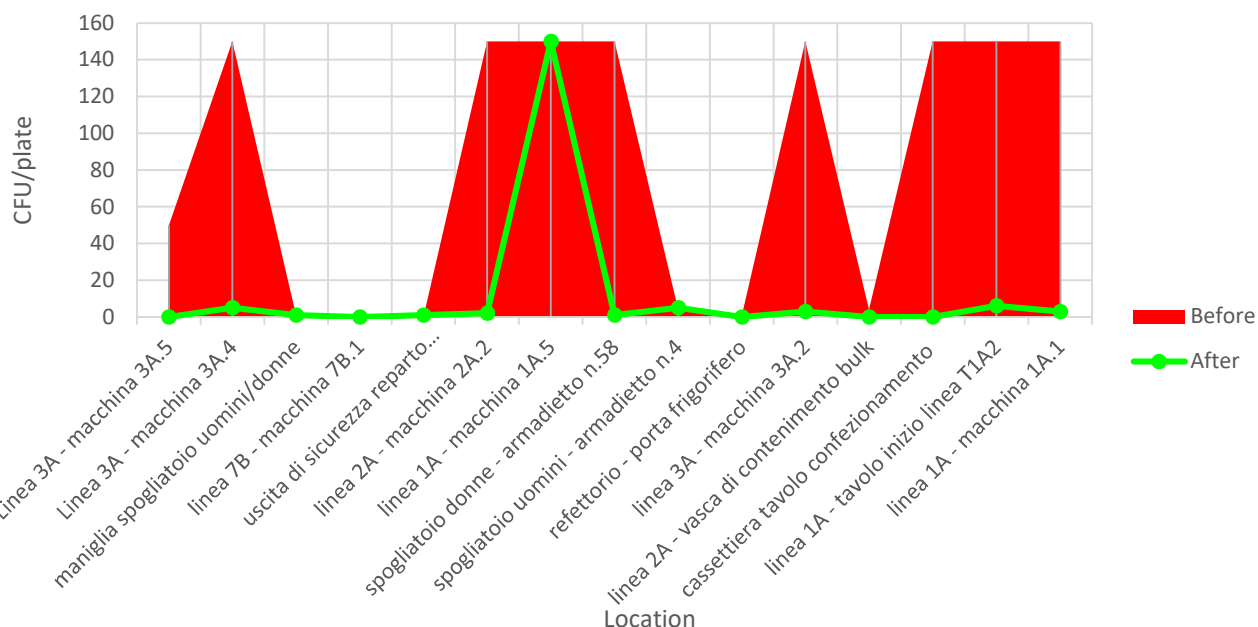
The same test has been repeated after one month, in this case the microbial counting has been tested 36 hours and again 84hours after the treatment while activities carried on as per standard manufacturing plant. To be specified that active PCO filtration has not been switched ON after the dry fog treatment, indeed the target of this second part of the test was to check the residual effect of the dry fog treatment on surfaces in the days after the treatment during standard activities.

Results

Test n°1 – November 2020:

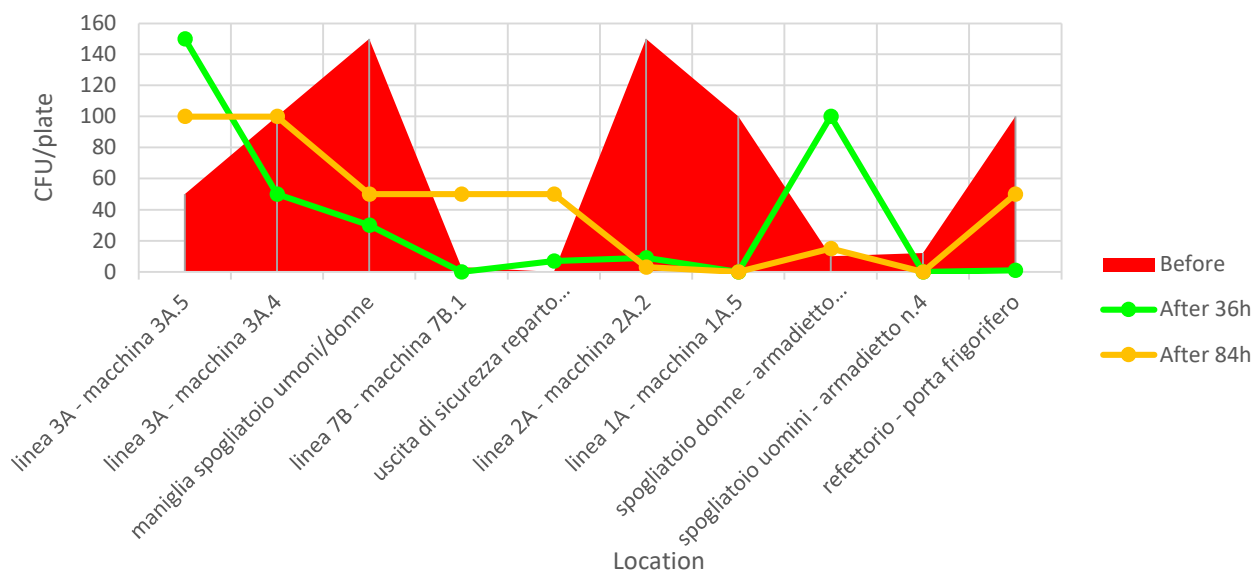


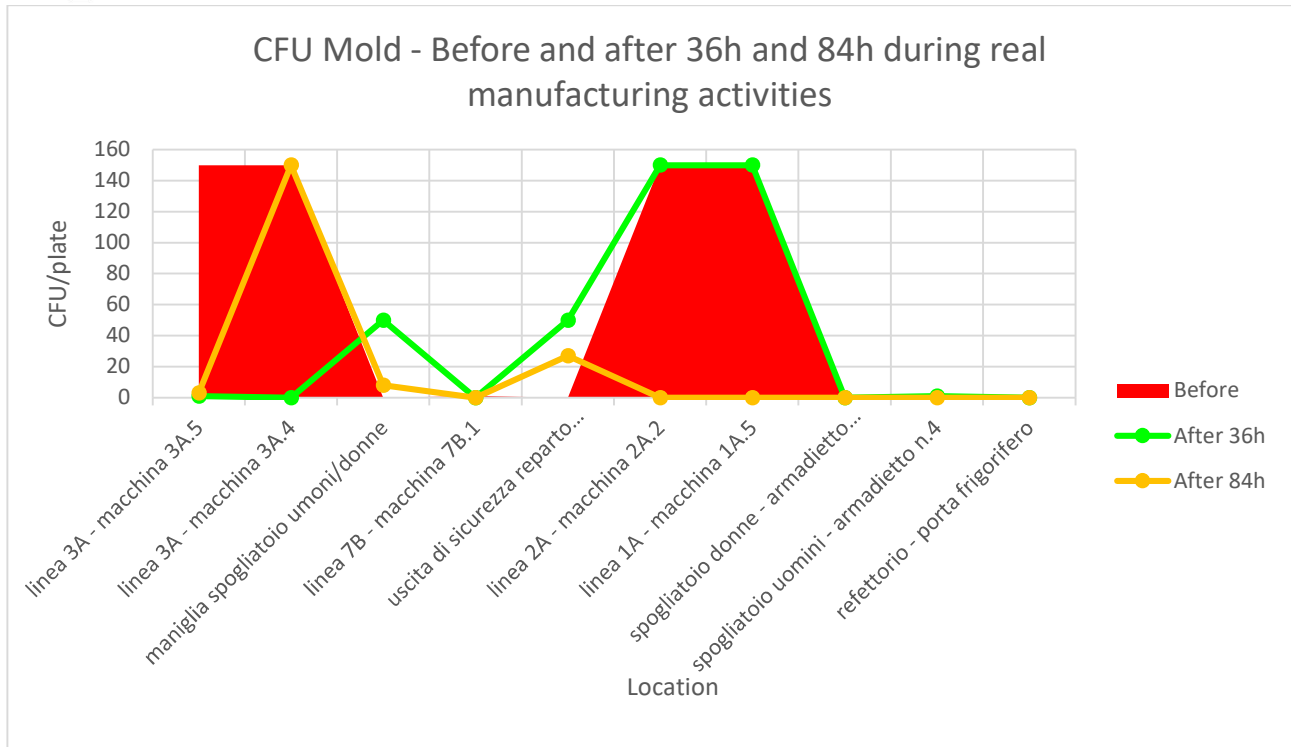
CFU mold - before and after dry fog sanitization



Test n°2 – December 2020:

CFU Bacteria - Before and after 36h and 84h during real manufacturing activities





Analysis and conclusion:

Test n°1 confirm the effectiveness of PAT3 sanitization process even in large space as a manufacturing plan, most of the points shown a residual microbial contamination proximal to zero, we got some exception probably due to spot contamination by employers starting their shift, indeed microbial counting has been conducted at 9:00am, thirty minutes after beginning of production shift.

Test n°2 shows a fluctuating result, it has to be highlighted that microbial counting has been carried out during normal activities, hence, local spot contamination by operators might have affected the test. It is interesting the general trend, indeed, even after 84hours from the sanitization, the average contamination is lower than initial condition (even if the PCO filtration was switched OFF). Moreover, in some cases it is possible to notice the microbial reduction between test at 36h and 84h, thanks to the residual effect of silver ions.