

Position Statement

COVID-19 and HVAC Hygiene

Most regulations and codes of HVAC are designed to improve the overall energy efficiency and environmental sustainability of the system. However, there has been no emphasis given by the regulators and the building owners on the hygiene assessment due to microbial and other potential agents that may adversely influence the building's health and hygiene. Maintenance of HVAC to address the microbial influence is exceedingly becoming important as it may act as an accumulation and dissemination hub of infectious agent that may impact the occupant health adversely. Currently, coronavirus (COVID-19) is identified as a potential infectious agent that can infect occupants leading to death in extreme conditions. The ventilation flowrate in energy tight buildings is directly proportional to the spread of air-borne infectious agents including the recent escalation of COVID-19 issue.

Droplets generated from a person infected with coronavirus are identified as the primary source of dissemination and accumulation in occupiable space. While most of the larger droplets travel short distances (< 1 m), some of the smaller size nuclei may enter in air-conveyance systems only to settle on coils, ducts and other HVAC components due to favorable conditions (including biologically active materials) or spread through ductwork of air distribution systems. A wide range of biologically significant entities such as viruses, bacteria, mold, mites, insects, protozoa, algae, other cystic life forms and others are generated especially in damp and dirty ducts system both in residential, commercial, or institutional settings that can provide breeding ground and the transmission of such infectious or disease causing agents including the virus. It can remain in the building if not removed appropriately due to air circulation especially where ventilation is mechanically controlled. It is estimated that typically the air change rate (ACR) is four times per hour in a mechanically ventilated building; however, it may be up to 8-10 times in hospital and other healthcare settings.

Air filtration, cleaning and hygiene management of HVAC of a building can potentially reduce the risk of coronavirus (COVID-19) spreading into occupiable spaces. Therefore, when developing a proactive program for good IAQ practices, it is encouraged to evaluate the hygienic condition of the HVAC system. In the event of undesirable sanitary conditions of the HVAC system due to both a-biological and biological contaminants, call a professional environmental remediation company that specializes in restoring HVAC systems to mitigate the issue/s.

*Dr. Rajiv Sahay, FIAS, CIAQP
Laboratory Director,
EDLab at Pure Air Control Services, Inc,
4911-C Creek Side Drive
Clearwater, FL 337620*