



California State University, Sacramento
Risk Management Services
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April 23, 2021

To: Campus Community

From: Gary Rosenblum, AVP Risk Management Services

Campus HVAC Update: MERV-13 Filters to be Installed in All Buildings

EXECUTIVE SUMMARY

This report updates the previous November 2020 report to the Executive Safety Committee and confirms that MERV-13 filters are now being installed in University Buildings and UEI buildings.

This report provides the science and engineering information about HVAC systems on campus as they impact our campus Cal-OSHA required-COVID-19 Safety Program and other State and System COVID-19 safety directives.

The primary means to manage COVID-19 risk on campus are mandatory wearing of face coverings, keeping distance from other people, and disinfecting frequently touched surfaces, along with vaccination of as many employees and students as possible. HVAC is important but secondary to those safety measures.

While the HVAC systems on campus, both stateside and auxiliary owned and operated, are not designed for virus control as if they were in a hospital or cleanroom, they can still be serviced to provide additional risk mitigation as suggested by government guidelines and recommendations.

These government guidelines are to increase to the maximum extent possible the mixture of outdoor air into the HVAC system while maintaining interior temperature and carbon dioxide levels within required comfort and air exchange limits, and installation of recommended air filters (MERV-13) that have a higher capacity to filter particles in the air.

All these government guidelines and recommendations to improve risk mitigation through HVAC operation are being applied on campus stateside owned and UEI buildings and are expected to be completed by the start of the fall semester.



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April 22, 2021

To: Campus Community
From: Stephen Leland, Director, Environmental Health and Safety
Re: **Campus HVAC Update: COVID-19**

SUMMARY

Evidence collected by public health organizations worldwide indicates that COVID-19 is primarily transmitted through three routes of exposure.

1. Inhalation of large respiratory droplets expired by an infected individual while in proximity, i.e., within 6'. Potential for exposure to large droplets is significantly reduced through the consistent and proper use of face coverings and physical distancing.
2. Inhalation of expired smaller droplets or aerosols expired which can remain airborne for longer periods of time. Aerosols of this size are reduced through dilution by natural or mechanical ventilation in addition to installation of higher efficiency filters in building heating, ventilation, and air conditioning (HVAC) systems.
3. To a much lesser extent, contact with a contaminated article or surface. This route of exposure is controlled through improved personal hygiene, i.e., frequent hand washing or use of hand sanitizers, and regular cleaning of surfaces frequently touched by individuals.

The University has established a comprehensive plan targeted at minimizing the risk of virus transmission through person-to-person contact which includes physical distancing, mandatory wearing of facial coverings, and cleaning/sanitization of common touchpoints and occupied rooms.

In addition to these actions, the campus is following guidance provided by Center for Disease Control (CDC) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) with regard to HVAC management during the COVID-19 pandemic to further reduce the risk.



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CAMPUS RECOMMENDATIONS IMPLEMENTED

ASHRAE and the CDC have provided recommendations for operation of Higher Education Institutions. Within these recommendations, there is guidance on HVAC systems, and maintenance/preparation for operation during the COVID-19 pandemic. Recommendations include:

- Increase the percentage of fresh outdoor air ventilation delivered by the HVAC system
- Increase air filter Maximum Efficiency Reporting Value (MERV) rating to MERV-13 if possible, without diminishing the design airflow
- Set regular filter cleaning/replacement intervals
- Decrease occupancy of buildings, where possible
- Increase total airflow supply in spaces that are occupied

Sacramento State has reviewed and implemented the recommendations that ASHRAE and the CDC have put forth for Higher Education Institutions. Steps Sacramento State has taken to further improve HVAC efficiency and indoor air quality include:

- In response to the recommendation for upgrading of HVAC filters to Minimum Efficiency Reporting Value (MERV) -13 in buildings that allow for this filter to be used, Facilities Management is upgrading HVAC filters from the standard MERV-8 to MERV-13 in University owned buildings. UEI buildings are receiving similar MERV-13 upgrades.
- Maximizing outdoor air brought into the buildings without adversely impacting temperature conditioning. Air handlers are adjusted from normal settings to increase the percentage of fresh outdoor air mixed into the system thereby reducing the percentage of returned or recirculated air. Dilution will significantly dilute the quantity of virus in the air, reducing the potential for infection.
- Set regular maintenance schedules for cleaning/replacement of filters. Filters are replaced at least semi-annually to maximize performance of the air handling system.
- Target completion date for MERV-13 installation in all University owned buildings and UEI buildings is August 1st.
- Reduce occupancy in campus spaces in accordance with the physical spacing recommendations provided by the CDC and California Department of Public Health (CDPH).
- Campus continues to follow distancing requirements in classrooms and other locations on campus require 6 foot distancing, until further guidance is published by the public health authorities.

Student Health and Risk Management Services are consistently reviewing COVID-19 guidelines and recommendations, and will make adjustments to current practices as more information becomes available.