

Novel Coronavirus (COVID-19)

Los Angeles County Department of Public Health Guidance for Ventilation in Restaurants

This document provides guidance to dine-in restaurants, brewpubs, craft distilleries, breweries, bars, pubs, and wineries to support a safe environment for workers and customers. Implementation of these guidelines should be considered only during the current pandemic.

With infectious diseases moving in the air, HVAC systems can decrease person-to-person exposure; an important step in curtailing the spread of infectious diseases. Ventilation is not capable of addressing all aspects of infection control.¹

Definitions:

- **Ventilation** – supplying air to or removing air from a space, either naturally or mechanically, for the purpose of controlling air contaminant levels, humidity, or temperature within the space.
- **Air Handling Unit (AHU)** - a device used to regulate and circulate air as part of a heating, ventilating, and air-conditioning (HVAC) system.
- **Heating, Ventilation and Air Conditioning (HVAC)** – the process of providing thermal comfort and acceptable indoor air quality (including the removal of airborne bacteria & viruses)
- **Minimum Efficiency Reporting Values (MERV)** – a measurement scale to report the effectiveness of air filters. Filters with higher MERV ratings trap small particles more effectively than filters with low MERV ratings.
- **Ultraviolet Germicidal Irradiation (UVGI)** – a disinfection method that uses ultraviolet light to kill or inactivate microorganisms
- **Non-Pharmaceutical Interventions (NPI)** – all methods to reduce an epidemic spread without requiring treatments

Recommendations to Improve Indoor Air Quality:

- Install higher MERV-rated filters to more efficiently capture virus particles and reduce airborne infectious material (check with the manufacturer if higher rated filters can be used in the AHU)²
- Change the AHU settings to increase the amount of outside air pulled into the building (up to 100%) while simultaneously exhausting or pushing more indoor air outside. This indoor air “flushing” of the building will dilute airborne viral particles.
- If the AHU has a humidification device, maintain relative humidity between 40% to 60%^{1,2} to limit spread and survival of viruses.
- Install a UVGI device in the AHU to disinfect air³.
- Relocate dining tables out of the direct flow of air from supply grilles to minimize travel of their respiratory droplets or for permanently mounted dining tables, redirect airflow away from customers⁴.
- Portable air cleaners may be utilized in addition to the ventilation system

¹ CDPH, COVID-19 Industry Guidance: Dine-In Restaurants, May 12, 2020

² ASHRAE Position Document on Infectious Aerosols, April 14, 2020

³ America Society for Microbiology, 2019 Novel Coronavirus (COVID-19) Pandemic: Built Environment Considerations to Reduce Transmission

⁴ CDC, Early Release – COVID-19 Outbreak associated with Air Conditioning in Restaurant, Guangzhou, China, 2020



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Additional Considerations:

- Increase ventilation of indoor spaces by opening windows or setting AHU up to 100% outside air
- Continue to operate the HVAC system after business hours to maintain a flow of outside air.
- Maintain the restroom air exhaust system in good working order.
- Inspect heat recovery equipment to ensure no leakage.
- To maintain comfort, set heating and cooling temperature to desired level and do not change.
- Do not perform duct cleaning during pandemic to avoid re-entraining virus particles into the air.
- Maintain regularly scheduled AHU air filter change-outs.
- Prior to making any changes to the HVAC system/air flow within the facility, consider the following:
 - Consult a building engineer for recommendations on changing the ventilation system for the specific restaurant
 - Contact the mechanical engineer from the local Building and Safety Department for guidance/technical information
 - Note that any upgrades/changes to the HVAC system, including upgrading air filters, may require obtaining permits and approvals from the local building department

Additional References:

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7. **Federation of European Heating, Ventilation, and Air Conditioning Associations** --
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12. <https://up.codes/viewer/california/ca-mechanical-code-2016/chapter/4/ventilation-air#402.0>

