

HVAC&R Nation

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The wheel deal

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Ultraviolet germicidal irradiation

COVID confidence

10 essential pieces of advice for you and your customers

COVID CONFIDENCE

We provide 10 essential pieces of advice for you and your customers during the pandemic.

Since our world got turned upside down, we've been learning more and more about COVID-19 and how to prevent its spread. Although we're still a long way from understanding the virus completely, the time seemed right to provide an update.

Drawing from AIRAH's extensive COVID-19 guidance and external resources, we've compiled a list of 10 HVAC&R-related pieces of information and advice. We hope they'll answer some of your questions, and your customers' too.

HOW DOES COVID-19 SPREAD?

SARS-CoV-2, the virus that causes COVID-19, is mainly transmitted through respiratory droplets or small particles such as those in aerosols, produced when an infected person coughs, sneezes, sings, talks, or breathes.

People can become infected with the virus if they directly inhale airborne droplets from a person with COVID-19 who has expelled the droplets from their mouth or nose.



According to the Center for Disease Control (CDC), there is evidence that droplets and airborne particles can remain suspended in the air and be breathed in by others, and travel distances beyond 1.8m (for example, during choir practice, in restaurants, or in fitness classes). In general, indoor environments without good ventilation increase this risk.

Respiratory droplets and small particles can also land on surfaces. Other people can become infected with the virus by touching these objects or surfaces, then touching their eyes, nose or mouth.

Please note that organisations around the world are still assessing the ways COVID-19 is transmitted. AIRAH is regularly updating the information on its webpage.

ROLE OF HVAC SYSTEMS

Well-designed and maintained HVAC systems can help control the spread of COVID-19.

The WHO recommends increasing outdoor air ventilation using initiatives such as economy cycles, and avoiding recirculation of air. Building owners and operators should seek qualified advice on increasing ventilation in existing systems.

In line with guidance from SafeWork Australia, AIRAH recommends that employers seek confirmation from their building owner or facilities manager that the air conditioning system is properly designed and maintained.

Keeping relative humidity between 40 and 60 per cent will create conditions that reduce the



risk of infection through inhalation of airborne droplets carrying the virus. Research from the International Society of Indoor Air Quality and Climate (ISIAQ) shows that viruses survive better at increased humidity with 60 per cent active above 60 per cent relative humidity.

Low humidity in occupied buildings should be avoided as this can dry out the mucous membrane, which is one of our primary means of defence. ISIAQ research shows that virus survival decreases with decreasing humidity.

The WHO recommends increasing air filtration to as high as possible without significantly diminishing design airflow. AIRAH strongly advises seeking qualified advice that effective air filters at the recommended performance level have been selected and maintained appropriately.

The WHO has also provided specific advice on the use of fans. It notes that table or pedestal fans are safe for air circulation among family members living together who are not infected with the virus. However, fans should be avoided when people who are not part of the immediate family are visiting, since some

people could have the virus despite not having symptoms. Air blowing from an infected person directly at another in closed spaces may increase the transmission of the virus from one person to another.

The typical split-system air conditioning units common in Australia also circulate air within a room. As indicated above, care should be taken to avoid situations where air from an infected person may be blown directly onto other people.

Please note that some ventilation systems, such as those in carparks, do not recirculate – all air is exhausted directly to the atmosphere. These systems are therefore highly unlikely to spread the virus unless they feed into nearby air intakes for other HVAC systems.

WEARING MASKS AND PPE



For the latest advice on wearing masks, refer to the Australian Department of Health and WHO websites.

AIRAH recommends that HVAC&R professionals conducting essential work, especially in areas with community transmission of COVID-19, remain informed about the latest recommendations and consider the use of masks where appropriate.

Australian building services company A.G. Coombs recommends that technicians wear PPE when replacing or servicing air filters. This includes P2 mask or appropriately rated respirator, coveralls and gloves.

“After turning off the air handling unit, filters should be carefully removed to avoid dust or other particles being released into the air, and the dirty filters should be bagged and tied, and the bag disposed of in an appropriate waste disposal process,” says the company in its advisory note on HVAC and COVID-19.

“Surfaces should be cleaned to remove any residual particles. Service of washable air filters should be carried out with similar approved procedures and use of PPE.”

For more information go to www.agcoombs.com.au/news-and-publications/advisory-notes/hvac-and-covid-19/

RESIDENTIAL AC: DISINFECT OR NOT?

There is no indication at this stage that home air conditioning systems can spread the disease. Although AIRAH recommends regular maintenance and cleaning of air conditioning equipment, there is no special cleaning or disinfecting requirement because of the coronavirus.

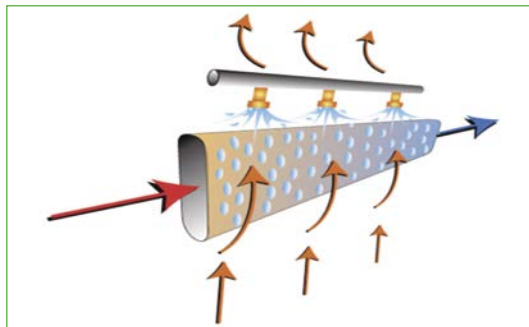
If you suspect that the surface of an air conditioning unit has been affected – by someone coughing on it, for example – use a simple disinfectant similar to that recommended by the United States Environmental Protection Agency to clean the surface.



Please note, however, that the typical split-system air conditioning units common in Australia circulate the air within a room, much like fans. As indicated above, care should be taken to avoid situations where air from an infected person may be blown directly onto other people.

EVAP AC: TRANSMISSION RISKS?

Evaporative air conditioning systems use drinking water. According to the Water Services Association of Australia (WSAA), drinking water in Australia is high quality and is well treated. There is no evidence that drinking water will be affected by the COVID-19 virus or that it is transmitted by drinking water. Existing water treatment and disinfection processes, including use of chlorine, are effective in removing viruses from water supplies. The WSAA has developed a public fact sheet for customers around water and COVID-19.



FROZEN FOOD SAFETY AND RISKS

According to the Centres for Disease Control and Prevention (CDC), there is currently no evidence to support transmission of COVID-19 associated with food. It says that “there is likely very low risk of spread from food products or packaging that are shipped over a period of days or weeks at ambient, refrigerated, or frozen temperatures”.

The CDC says that before preparing or eating food it is important to always wash your hands with soap and water for 20 seconds for general food safety. It also recommends washing your hands throughout the day after blowing your nose, coughing or sneezing, or going to the bathroom.



SURFACE CONTAMINATION

According to the WHO, coronaviruses (including preliminary information on the COVID-19 virus) may persist on surfaces for a few hours or up to several days. This may vary under different conditions (e.g., type of surface, temperature or humidity of the environment).

The WHO recommends cleaning surfaces that may be affected then treating with simple disinfectant to destroy the virus and protect yourself and others. Wash your hands regularly with soap and water or an alcohol-based hand rub. Avoid touching your eyes, mouth, or nose.

COVID-SAFE SCHOOL BUILDINGS

In Australia, ventilation of school buildings can be a challenge, but in times of COVID-19, good indoor air quality is crucial.

AIRAH's COVID-19 guidance for ventilation in school buildings is as follows:

- Increase outdoor ventilation of spaces
- Switch air handling units with central recirculation to 100 per cent outdoor air*
- Ensure CO₂-controlled ventilation runs at maximum capacity during occupancy
- Switch on ventilation at least two hours before and after occupancy
- Instruct teachers and staff on proper use of ventilation facilities
- Open windows as much as possible during school hours and air during breaks
- Install a CO₂ monitor with traffic light indicator
- Keep toilet ventilation 24/7 in operation and/or keep windows open.

* Depending on the school's climatic region, some air conditioning systems will struggle to adequately condition the air with 100 per cent outside air being introduced. The school's personnel are advised to consult their air conditioning service provider or seek assistance from suitably qualified people before changing the function of their systems.





AIRAH STATEMENT ON COVID-19

AIRAH continues to closely monitor developments and advice regarding COVID-19. Gathering people together to share ideas and discuss the most important HVAC&R issues is a large part of what we do with our conference and events program, but public safety is paramount, and we have adjusted our programs accordingly.

Where possible, AIRAH is running face-to-face events and training, always with strict COVID-19 protocols in place to ensure you can participate with peace of mind. To find out what is planned in your state or territory, go to www.airah.org.au/events

WORKING DURING LOCKDOWN

Australian states and territories have different levels of restrictions to deal with COVID-19.

To stay on top of how they affect your daily work, here are the go-to sites organised by state:

- **ACT Health:**
www.covid19.act.gov.au
- **NSW Health:**
www.health.nsw.gov.au/Infectious/covid-19
- **Northern Territory Department of Health:**
www.coronavirus.nt.gov.au/home
- **Queensland Health:**
www.qld.gov.au/health/conditions/health-alerts/coronavirus-covid-19
- **SA Health:**
www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet

- **Tasmanian Department of Health:**
www.coronavirus.tas.gov.au
- **Victoria – Department of Health and Human Services:**
www.dhhs.vic.gov.au/coronavirus
- **WA Department of Health:**
ww2.health.wa.gov.au/Articles/A_E/Coronavirus

EXPERT ADVICE FROM OVERSEAS

Some of the key resources from international industry bodies include:

- ASHRAE Epidemic Task Force core recommendations for reducing airborne infectious aerosol exposure
- ASHRAE Epidemic Task Force reopening guide
- REHVA online course on the safe operation of buildings and HVAC systems during the pandemic



- The Indian Society of Heating, Refrigeration and Air Conditioning Engineers (ISHRAE) has shared a document with AIRAH members and the broader HVAC&R community – the COVID-19 Guidance Document for Air Conditioning and Ventilation. ■

For the latest AIRAH updates on COVID-19, visit www.airah.org.au/coronavirus