



HVAC SYSTEMS AND COVID-19

The COVID-19 pandemic has changed the way we operate HVAC systems.

Learn how you can prepare your HVAC system during this new normal.

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How HVAC Filtration Can Lessen The Impact of Colds and Flu Season

The COVID-19 pandemic that's sweeping its way around the world is an unprecedented crisis. In addition to the danger it poses to public health everywhere, it's also causing massive economic disruption. No business owner could have anticipated these developments, but they are offering us all a lesson in the importance of creating safe and healthy spaces for all.

One of the most impactful ways to create those safe and healthy spaces is to ensure excellent air quality. The Center for Disease Control (CDC) estimates there are over 1 billion cases of the common cold each year, while the World Health Organization estimates there are 3-5 million cases of severe flu each year. In the United States alone, the CDC estimates American business lose around 7 billion dollars annually in lost productivity due to flu-related absenteeism.



Without question, COVID-19 is orders of magnitude more dangerous than either the common cold or the flu. But the current global pandemic has highlighted the need for business owners to promote safer, healthier workplaces.

How Virus Spreads

All in all, there are more than 200 different types of viruses that cause the common cold and common flu. And while we all may be used to getting one or two each year, even mild colds or bouts of flu can cause us to miss work for a few days. Conversely, many people still try to work when sick, which spreads the illness to co-workers.

Most viruses are spread by direct contact with someone who is sick or when a sick person touches a shared surface, such as a doorknob. Sneezing and coughing are other common forms of transmission, as they throw tiny droplets which spread and fall on a range of surfaces.

Most notably, studies have also shown that some viruses can be spread through the air, including ductwork. These same studies have shown that virus can live in the air for hours and even be spread by breathing, and not just by coughing and sneezing.

This has obvious implications for the HVAC industry. As air quality professionals, we can educate our customers and business owners on the benefits of investing in high-grade HVAC filtration and cleaning, in order to mitigate the economic effects of annual absenteeism.

Remote Monitoring: A Smart Way to Adapt in a Time of Social Distancing

In the world of HVAC, remote monitoring is far from a new idea. And yet, with the COVID-19 pandemic continuing to disrupt life (and business) around the globe, remote monitoring might be one of the smartest and quickest ways an HVAC company can reinvent itself for our new normal.

Innovating For a New Future

Unfortunately, it's becoming clear our battle with the COVID-19 virus is going to be a marathon and not a sprint. The steps being taken to slow the spread, such as social distancing measures and non-essential business closures, may be with us until a vaccine is developed. That could be a few months or, more likely, a few years.

This constitutes a major risk to many businesses and HVAC companies are no exception. Those that survive in this landscape will be the ones who innovate and find new ways to help their customers.



Remote Monitoring Increases Safety and Efficiency

To customers, there are two big benefits with a remotely monitored system. The first is that it allows HVAC pros to monitor and assess an HVAC system without doing a site visit. During a time of social and physical distancing concerns, this means regularly scheduled checkup calls can be done remotely and techs only have to go on-site when a clear issue is identified.

The second benefit is that remotely monitored systems tend to last longer. With HVAC pros remotely monitoring and maintaining the system, the system is optimized, and the equipment is more efficient. This further reduces the need for on-site repairs and wholesale replacement.

Right now, commercial business owners are looking for ways to reduce spending and the number of occupants in their buildings. Remote monitoring aligns with both of these pressing needs.

How to Add Remote Monitoring to Your HVAC Toolbox

There are two main ways to provide your customers with remote monitoring services. You can provide the service yourself, or you can partner with a third-party monitoring company.

Managing it yourself offers higher gross margins over the long term but requires some upfront investment in equipment and training. As the number of systems your business is actively monitoring grows, you may also need to designate staff to the task full-time.

If you choose to partner with a third-party company that specializes in remote monitoring, you can get going relatively quickly without any significant investments in new equipment or training.

Keep an Eye on the Growth of HVACaaS

Savvy HVAC companies will also want to keep an eye on the emergence of another new trend: HVAC as a service (HVACaaS). This trend takes remote monitoring to a new level, with equipment manufacturers bundling remote monitoring subscriptions with their equipment directly.

With HVACaaS, manufacturers assume all of the responsibility for remotely monitoring their systems and responding to maintenance calls. The opportunity for HVAC companies lies in the fact manufacturers are likely to outsource those maintenance calls to local HVAC pros, rather than create their own network of HVAC techs. Now would be the time to reach out and explore possibilities for partnership.

The world is changing at a rapid pace because of COVID-19. Now is the time for HVAC firms to consider every opportunity to innovate. Those who survive and even thrive during this period of adversity will be the ones willing to adapt.

Simple Ways HVAC Companies Can Safely Get Back to Business During COVID-19

The COVID-19 pandemic is disrupting nearly every aspect of life and business around the world, and there appears to be no clear end in sight. In fact, it's likely that measures such as social distancing will be in place—to some degree or another—well through AC season and beyond.

As this new reality settles in, all businesses need to adapt and adopt new ways of working. This is especially true for HVAC companies and pros; whose work is so dependent on lengthy site visits and interacting face-to-face with clients and other trades.

From an HVAC perspective, navigating this landscape will be challenging but hardly impossible. There are some simple things you can begin doing now to protect yourself, your employees, your clients, and your business.



Putting Minds at Ease in a Client's Home

One of the trickier challenges HVAC companies will face is responding to calls in a client's home. For starters, many homeowners will put off even contacting an HVAC company for services due to coronavirus concerns. Because of this, savvy HVAC businesses need to approach this as a marketing problem and find ways to educate current and potential clients on the measures they're taking to respond to calls safely.

Those measures are simpler than you might think. For instance, when arriving at a client's home, the HVAC technician can call the client and tell them to self-isolate in a different area of the home. The HVAC pro can then proceed to enter the home and perform the required maintenance work.

If the client has compatible devices, this site-visit can even be monitored in full over a video call, so the homeowner can see that work is being done as well as monitor what the HVAC technician touches in the home.

Of course, the HVAC technician should be armed with the proper cleaners, disinfectants, and hand sanitizers—cleaning surfaces and equipment as they go.

Staying Safe on the Construction Site

For HVAC pros working on a new construction site the challenges are different. There are countless other trades doing work at the same time, so asking others to self-isolate isn't feasible.

Most construction sites are already adopting physical distancing protocols. Soon (if not already) those protocols are likely to become more forceful, such as kicking any workers who don't adhere off the site entirely. HVAC business owners and managers, therefore, need to ensure their techs are fully aware and respectful of these protocols.

Beyond physical distancing, HVAC techs visiting a construction site should be taking care to never share tools or equipment with others on site. And if they do, they need to be equipped with the proper disinfectants to clean the item.

Taking Advantage of Remote Diagnostics

Last but not least, this is an opportune time for HVAC companies to educate their clients on the value of remote diagnostics. This is especially true for commercial clients.

With remote diagnostic systems in place, HVAC companies can actively monitor the performance of the entire system from afar. Equipment can be assessed, the system can be optimized, and maintenance issues can be identified—all without doing a single site visit.

This takes some additional up-front installation and investment but once set up it helps reduce the number of service calls needed to maintain the system. Given that COVID-19 is likely to keep physical distancing and other measures in place for the next 12 to 18 months (or until a vaccine is widely available), this means equipment can be professionally maintained through several seasons, while still promoting as much physical distancing as possible.

Relationship Between COVID-19 and HVAC

These challenging times have made us rethink how our HVAC systems operate. A lot of precautions and procedures have been taken for businesses to continue to operate. Today, more and more businesses are reopening as bans are being lifted.

With businesses reopening, there comes a lot of recommendations on how to make sure your building is safe to begin welcoming people into again. The ASHRAE Epidemic Task Force has put together a guide of recommendations on how to safely reopen a building. We take a look at a couple of those recommendations.

Ensure Your Buildings HVAC Systems are Safe

Before your building is reoccupied routine maintenance on the HVAC systems should be performed. Once routine maintenance has been completed, it's recommended that tests should be conducted to ensure the HVAC systems are in fact running safely, especially if they had been shut down for a period of time. M. Dennis Knight, P.E., FASHRAE, principal/engineer at Whole Building Systems in Charleston, South Carolina, and member of ASHRAE's Epidemic Task Force, suggests that building owners consider recommissioning their systems.

A commissioning provider will ensure the systems are operating as stated in the systems manual. They will prepare a commissioning plan and oversee all functional performance testing. Once the systems have passed the testing, you can be confident your building is safe for reopening.



Air Filters Make a Difference

The average droplet size expelled when someone coughs or sneezes ranges from 10 μm to 100 μm . This size of droplet doesn't stay airborne long which means your HVAC system may never catch it. Droplets under 10 μm , however, can stay airborne up to three hours. These are the droplets you need to be concerned about as these are the size of COVID-19 particles.

To tackle these particles you need to make sure you have the right filter. A MERV-13 filter is the minimum filter rating that is recommended for HVAC systems. It removes at least 90% of particles in the 3-10 μm range, 85% in the 1-3 μm range and 50% in the 0.3-1 μm range. Before installing MERV-13 or higher rated filters, be sure that your HVAC system can handle it.

Use Outdoor Air as Much as Possible

Now is the time to rethink how we air condition our homes. As the weather gets hotter, more people will begin turning on their air conditioning units. Central air conditioners can be a problem as they transmit indoor air from room to room. It's recommended that people open windows to climate control their office spaces instead of using the central air conditioner.

In your home it's best to have your A/C unit taking in only outdoor air and expelling the indoor air out of the home using good quality vents. This will lessen the potential of recirculating COVID-19 particles.

Better Safe than Sorry

These are rapidly changing times we are in and we are all responsible for taking as many safety measures as possible. Ensuring your HVAC system is running safely and effectively plays a significant role in combating COVID-19.

Restarting Idle HVAC Systems After the COVID-19 Shutdown

In recent months, many businesses that had to shut down their buildings are beginning to reopen their doors. While this is great to see, it's important these buildings are recommissioned properly.

Recommissioning a building ensures the HVAC system is running as safely and effectively as possible. If the building was completely shut down, it's possible it could be subject to mould growth and require updated maintenance.

Air Quality

There are many factors that affect a buildings' indoor air quality once it's been shut down. These need to be taken into consideration when it's time to recommission the building.

An important first step in re-starting a buildings' HVAC system is to check all air intakes to make sure they are clear of and debris and any obstructions such as birds, rodents or insects that may have accumulated in the downtime. It's possible some have been damaged and need to be replaced with high quality vents.



If a ventilation system has been shut down for a period of time, it is at risk for mould growth. Mould growth greatly affects the indoor air quality of a building and puts occupants at risk of both short and long-term health problems.

Mould will grow whenever a buildings' relative humidity exceeds 65% for more than 100 days. If the relative humidity is over 80% mould can begin growing within 10 days. Running the buildings HVAC system periodically to maintain a relative humidity of 60% can greatly reduce the chances of mould growth.

System Compliance

Safety and maintenance measures must be kept up-to-date or it may be deemed non-compliant and the building should not be occupied. If HVAC systems have been shut down an HVAC professional should be consulted to ensure proper recommissioning procedures are followed.

To ensure the building is ready for occupancy, ASHRAE has developed a Building Readiness Plan. The HVAC system must be fully tested before it is reopened. Once it is reopened it must be checked again to ensure the HVAC system is running smoothly.

Maintaining Building Integrity During COVID-19

COVID-19 has created many challenges for business owners including how they operate their building. Whether the building has been completely shut down or running at minimal occupancy, this is an opportunity to get maintenance and a deep cleaning done.

Some buildings may not have been shut down for this long before. It's important to follow the proper procedures for recommissioning to ensure the integrity of the building and safety of its occupants.

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