

MECHANICAL CODE DISCUSSION

HVAC Systems and COVID-19



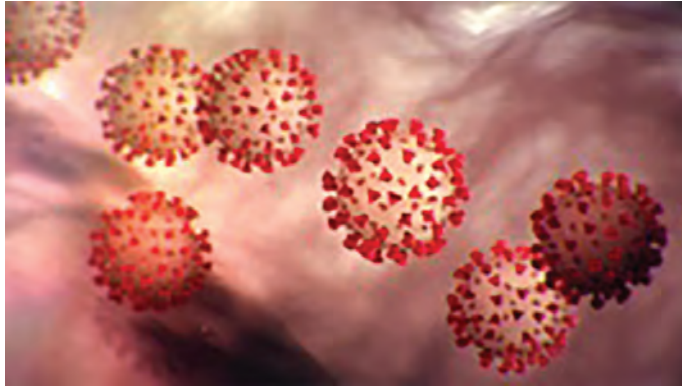
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AS WE MOVE INTO SIX MONTHS of dealing with shutdowns, Zoom meetings, health concerns, etc., it's appropriate to discuss the buildings we live in and how building design, building codes, and specifically HVAC design and operation impacts the spread of viruses and bacteria. This discussion will identify several factors to be considered in buildings, with future discussions digging deeper into the subject. Each of these have been discussed in the past; however, never with a focus we current have on the spread of virus. Please consider these factors in your new systems and those you service.



VENTILATION

Defined as; *The natural or mechanical process of supply conditioned or unconditioned air to, or removing such air from, any space.*

Ventilating a space is accomplished by removing a portion of the air contained within a building, replacing it with fresh air from outside. We might do this with natural ventilation, opening windows and doors, allowing air to move in and out of the building, or with mechanical ventilation, where one or more fans is used to exhaust air out and/or supply fresh air from outside into the building. The purpose; to maintain air quality. The residential code allows use of any of the following strategies:

- Exhaust fan, preferably running continuously, removing air which is replaced by air leaking into the building.
- Supply fan, either part of the HVAC system or an independent fan, drawing air from outside, discharging into the building, creating a positive pressure, which results in the excess air leaking to outside.
- Balanced ventilation, with a supply fan and an exhaust fan, removing and replacing air, not relying on air leakage. These systems include HRV/ERV systems, which recover heat energy from the discharge air.

If the IECC (Energy Code) was not amended in Utah back in 2012, every home in all counties would be required to include continuous mechanical ventilation.

AIR FILTRATION

Defined as; *A device that removes particles, mist, and other contaminants from the air.*

Air filter efficiency is commonly rated based on the Minimum Efficiency Reporting Values or MERV rating, developed by ASHRAE. The higher the number, the better the filter is at trapping specific types of particles. $MERV \geq 13$ are efficient in capturing airborne viruses.

Considering filters with a MERV 13 rating or better is effective in capturing viruses, your customers may be replacing their filters with 'better' filters. Of course, we know, a 1" pleated MERV 13 filter will restrict airflow to the point coils will freeze, AC efficiency is reduced, comfort →



Doing battle with the clock? Four ways to win the game

YOU'RE SWIMMING

in emails and phone calls and it's only 10 AM. How do you find time to be "strategic"— or even get to that one project you planned to complete today? Here are a few tips on becoming more efficient:

Beat clutter with the "D" system.

Every document and email you receive should be discarded, deleted, done, dated (as in, when, you'll do it), drawered (filed) or deterred (forwarded to someone else). The goal? Handle each piece of paper or email once.

Manage interruptions.

You can't stop people from dropping by or calling. But you can determine how you'll react to their requests. Decide within the first minute whether to deal

with the issue on the spot or whether you need to schedule time for a longer conversation.

Make a daily plan.

Block out time for what you want to accomplish in a day. Schedule high-focus tasks for the time of day when you're most alert. Ideally, you want to tackle your top priority within 20 minutes at the start of the day.

Set aside five to 15 minutes for planning first thing in the morning and at day's end.

Prioritize tasks: It's as easy as ABC, 1-2-3.

At the start of the week, list five things you have to accomplish during that

week. Compare No. 1 and No. 2, asking, "If I could get only one done

this week, which would it be?" Put a tick mark by the chosen one. Then compare No. 1 against the No. 3 item. Next compare No. 1 against No. 4 and No. 5.

Now, begin the process again, starting with the No. 2 item. Compare it with No. 1 and put a tick mark by the chosen item. Go down the list, comparing No. 2 against the other items. Do the same with No. 3, then No. 4 and No. 5.

The item with the most marks is your A, the next highest number of marks is your B, and so on. ■



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decreased and equipment life jeopardized. While in the local home center several months ago, I shot this photo of this filter, with the pressure drop listed on the back side. Notice the pressure drop 800 CFM at 0.21" wc. and for 1390 CFM, 0.44" wc. Does not leave a lot of available static for an evaporator coil and duct system.

CONTINUOUS OPERATION

Finally, if the fan in a ventilation system or HVAC system is not operating continuously,



ventilation is not provided, and air filtering does not occur. The code requires ECM motor in all whole house ventilation systems, whether it is a furnace, air handler, exhaust fan or HRV/ERV.

Please continue to reach out to me with your comments or question. Stay healthy and be safe.—Brent ■