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May 26, 2020

Mr. Robert Gordon
Director
Michigan Department of Health and Human Services
333 S. Grand Ave
P.O. Box 30195
Lansing, MI 48909

Letter Sent Via Email to BowdenAI@michigan.gov

RE: HEPA Filters in Existing Air Handling Units for Infection Control

Dear Director Gordon:

ASHRAE, a non-profit technical society of over 56,000 members focused on the built environment, recently formed an Epidemic Task Force to develop and deploy technical resources to help address the COVID-19 pandemic. I am writing to make you aware of this guidance and in particular as it relates to the State of Michigan's guidance of May 7, 2020 titled "MI Safe Start Plan." ASHRAE's full guidance, answers to frequently asked questions, and additional resources can be found at www.ashrae.org/covid19.

The MI Safe Start Plan mentions "HEPA filters on HVAC units" under Best Practice C: Sanitation/Hygiene in the "Controlling Spread in the Workplace" section on page 14. Filters meeting the High Efficiency Particulate Air (HEPA) standard must attain certain high levels of efficiency. Using filtration levels at this efficiency is a best practice when applied properly and well maintained in new ventilation systems for some health care spaces. However, ASHRAE has not published any guidance that says filters should or must be upgraded to HEPA level on existing air handling systems. The Attachment provides additional details on these different filtration systems.

With respect to building reopening in the context of the COVID-19 pandemic, ASHRAE's guidance does not recommend that filters on existing air handling systems should or must be upgraded to HEPA. Instead, ASHRAE recommends the following:

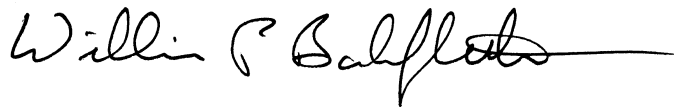
- Filters should be upgraded to at least a MERV 13, and if possible, to a MERV 14. The reason for this recommendation is due to difficulties involved with retrofitting HEPA filters to be used in existing air distribution systems, even if there is space in an air-handling unit to

accommodate them or if filters are placed on individual supply or return ducts. The impact on total system pressure requirement may preclude their use without major modifications to the system. Consequently, expert HVAC system evaluation is necessary.

- If neither MERV 13 or 14 can be safely retrofitted to existing HVAC systems, the use of portable HEPA filtration units that can be placed in occupied enclosed spaces may be an effective means to clean the air and help mitigate the transmission of infectious aerosols.
- When contemplating increasing the filtration efficiency of existing HVAC systems, consideration should be given to utilizing the services of a qualified design professional, a certified commissioning provider (CxP) or a certified testing, adjusting and balancing (TAB) service provider to perform an evaluation, especially for larger, more complex HVAC.

We hope you will consider modifying your guidance with ASHRAE's recommendations as stated above. If you have any questions or need additional information, please do not hesitate to contact me or have your staff email GovAffairs@ashrae.org. Thank you for your consideration of this important matter and for working to ensure the health and well-being of building occupants.

Sincerely,

A handwritten signature in black ink, reading "William P. Bahnfleth". The signature is fluid and cursive, with a long horizontal line extending to the right.

William P. Bahnfleth, Ph.D., P.E.
Chair, ASHRAE Epidemic Task Force

Enclosure

CC: Darryl K. Boyce, P.Eng., ASHRAE President
Jeff Littleton, ASHRAE Executive Vice President

ATTACHMENT

FILTRATION DETAILS

A HEPA filter shall exhibit a minimum efficiency of 99.97% when tested with an aerosol of 0.3 micrometer diameter (DOE-STD-3020-2015); with the filtration efficiency increasing for particle diameters both less than and greater than 0.2 μm .ⁱ

For non-healthcare facilities, buildings designed to current ventilation standards will have filters that have very low collection efficiency for particles in the size range generated by respiratory emissions. ASHRAE standard 62.1-2019 (non-residential) requires only MERV 8 filters and standard 62.2-2019 (residential) requires only MERV 6. As the figure below shows, such filters may have less than 10% efficiency for particles smaller than 2.5 microns. The least efficient filter that is rated for particles smaller than 1 micron by ASHRAE standard 52.2-2017 (the test standard for determining MERV values) is MERV 13. The next level up, MERV 14, performs even better but is less expensive and has a lower pressure drop than a HEPA filter.

ⁱ [Guidance for Filtration and Air-Cleaning Systems to Protect Building Environments from Airborne Chemical, Biological, or Radiological Attacks](#); DHHS (NIOSH) Publication No. 2003-136. Cincinnati, OH: [National Institute for Occupational Safety and Health](#). April 2003. pp. 8–12. doi:10.26616/NIOSH PUB2003136

