

Performance Of Air Cleaning Methods For Residential Buildings

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ABSTRACT

A worthy option for reducing building residents' exposure to indoor air pollutants is cleaning the air through filtration. Commonly known pollutants are only part of the array of indoor air contaminants affecting residents and the buildings that they occupy. The effects of hazardous air pollutants, including particulate matter, can be reduced by properly designed, installed, and maintained HVAC systems as well as by the use of portable air cleaners.

This paper provides a general introduction to indoor air quality and residential HVAC filtration. Portable air cleaners are also discussed, since they can be employed to increase protection against indoor air contaminants. Performances of current HVAC filters and filters for portable air cleaners are presented as well as limitations of test methods for testing such filters. In addition to the filter rated efficiency at specified flow rate, factors such as filter by-pass, flow distribution, and filter performance degradation play a critical role in effective removal of airborne contaminant from indoor air.