

COMBINATION FILTERS FOR IAQ AND ENERGY SAVINGS

Chris Moon¹, Christopher Muller²

¹Purafil, ²Purafil, Inc.

A combination particulate/gas phase filter is capable of controlling primary air pollutants to below levels specified by national air quality standards, as well as removing bacteria, mold and fungi. Since indoor contaminants consist both of particulates and airborne chemicals such as odors, VOCs and SVOCs, both types of filters are needed to treat the air. When dealing with HVAC and air pollution control systems, the pressure drop of a filter should be low while maintaining good airflow, as well as energy savings, throughout the life of the filter.

No single air cleaning technology exists that can solve all IAQ problems. Advances in filtration manufacturing technology have developed a new filter medium that incorporate silver nanoparticles to both standard nonwoven and HEPA media that can control PM 10 and PM2.5 along with viable particles. Adding this to a filter element employing granular sorbent media results in a pleatable air filtration medium that can now address essentially all the primary chemical pollutants of concern as well. Products incorporating this combination of filtration technologies can be used in commercial and residential applications, cabin air filtration and masks for personal protection.

This presentation will provide information on combination filters currently in use to control particulates and chemical contaminants and describe a new technology that provides for the additional benefit of microbial and virus control and how it is being used to clean outdoor air being used for ventilation as well as cleaning indoor air to improve and maintain acceptable IAQ.