

Air Quality Index and Filtration

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“Indoor air is always 2 to 5 times more polluted and may be over 100 times worse than outdoor air” ~Environmental Protection Agency

The days of being concerned about only filtering particulates in the air are quickly coming to an end. The EPA has created a highly publicized measure called the Air Quality Index (AQI) that is a composite measurement of Ozone, sulfur dioxide, carbon monoxide, and particles under 2.5 microns. It is important to note that most facilities throughout the state use air filters that are designed to capture particles greater than 3 microns in size and do nothing for the molecular organisms of ozone, carbon monoxide, and sulfur dioxide.

This is nothing new, it is simply a resurgence of the Clean Air Act that forever changed building maintenance back in 1990. Part of the Clean Air Act was the creation of the National Ambient Air Quality Standards (NAAQS), which is essentially the basis for the highly publicized AQI. NAAQS goes a little farther and has measures for lead and nitrogen dioxide, as well as a two-tier measurement system. Tier 1, or primary standards, are set to protect what the EPA classifies “sensitive populations” of asthmatics, children, and the elderly; while tier 2, or secondary standards, are set to protect the general population.

In attempting to combat your schools air handlers from circulating these molecular gasses the easy answer would be to use some sort of charcoal filter, but those that have tried charcoal often had mixed results. This is because conventional charcoal filter effectiveness is impacted by temperature, relative humidity and the volume of contaminants in the air. There are different charcoals and carbon combinations and types that should be matched to your specific application; making your efforts to provide the healthiest environment for your school more successful.

Europe has already made requirements for buildings to have air filters that adsorb the ozone, carbon monoxide, and other gasses in addition to the smaller particle sizes. Eventually the seemingly overboard regulations that Europe puts in place make their way into the United States. Public opinion is already being sought after with not only the EPA publicizing the AQI, but USA Today recently published a study they did of the gaseous chemicals and VOC's in the air around 100 schools across the country. The time is coming when air filtration will no longer be mostly about particles and gaseous/molecular filtration will be a dominating concern.



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