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What differentiates KPE from other firms is KPE design professionals are also forensic engineering experts. Our staff use the lessons learned from investigating construction defects and the design errors of others to maximize the quality of KPE's own designs.

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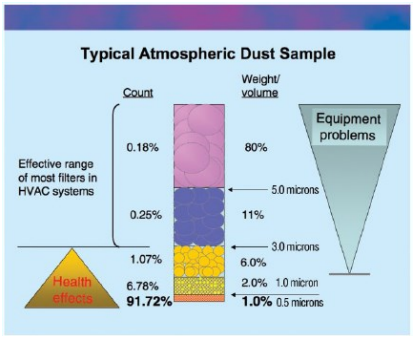
INSIGHT from Your Trusted Facility Design Team

Non-ionizing Polarized-Media (NIPM) Filters

According to the American Medical Association, respiratory ailments, often attributed to poor indoor air quality (IAQ) represent the third largest cause of death in the U.S. ranking only behind heart disease and cancer. Indoor air can be up to 7-10 times worse than outdoor air. Our body's defense systems cannot eliminate the very fine sub-micron particles. Problems with indoor air quality go beyond health related issues, adversely affecting productivity, absenteeism and even one's sense of well-being. Visible particles represent only a small fraction of particles found in indoor air. There are millions of particles in the average cubic foot of indoor air and 98% of those particles are 1 micron or less.



Non-ionizing polarized-media (NIPM) filters apply an active electric field, polarizing fibers in the filter and particles in the air to generate an electric force between them. The principle behind this method has been around since the 1930's, however it is only recently that the technology has been fully understood and used with maximum effectiveness for reliable performance.

The biggest performance advantage of the NIPM filter is its efficiency with the smallest sub-micron particles. Particles that pass through the filter become polarized. Polarized particles are charged with a positive pole and negative pole. Unlike ionized particles that pass through precipitating air cleaners, they do not attract to the first oppositely charged surface they encounter. Rather, they re-circulate in the air stream and attach to other polarized particles, chemicals, and odors. This process of agglomeration causes the particles to increase in size, where they collect in the air cleaner media on subsequent passes. Over time, even the smallest particles are removed from the air. Polarized molecules are not charged, and therefore less likely to collect where you don't want them to, such as walls, ductwork, and clothes.

Aside from efficiency, the biggest benefit is the payback from energy and operation cost savings. There are many costs associated with commercial filters. The lower static pressure of polarized media filters means less energy consumption. Costs associated with shipping, storing, and replacing filters are also lowered. NIPM filters load efficiently, leading to longer maintenance intervals. NIPM filters also install quickly into existing filter tracks without costly ductwork modification. They use disposable media pads which can be replaced in just minutes.

NIPM filters are ideal for removing odors as well as the smallest sub-micron particles, airborne viruses, pathogens, and volatile organic compounds (VOCs). This includes dust mites and dust mite feces, one of the largest causes of allergies. NIPM filters tend to do an excellent job of removing sub-micron particles without efficiency loss. NIPM filters can trap 97% of particles at 0.3 microns. Casinos were early users of this technology because of its effectiveness at removing tobacco smoke and odors and also the ability of the casinos to correlate air quality to revenue.

Polarized-media air filtration technology has become an important part of IAQ programs for contractors, engineers, and facilities managers in response to heightened awareness of IAQ.

For more information on IAQ and KPE, please visit our website, kpe-inc.com.