



“CHECK-IN” TO BETTER HOTEL AIR QUALITY

These days it's difficult to stay in a hotel room that hasn't been recently renovated with flat screen televisions, comfortable beds with luxury linens and a high speed internet connection. Thousands are spent per room for upgrades which are vital to the comfort of the guest, but many times these renovations are done with little consideration to the HVAC system. Indoor air quality (IAQ) is rarely addressed until it becomes a problem. Several years ago, The American Hotel and Motel Association reported that problems resulting from mold and mildew required hundreds of millions of dollars in remediation and repair costs, problems that can be avoided if addressed properly.

IAQ in the hospitality industry is a serious issue facing many challenges dealing with the different needs of living quarters, laundry facilities, indoor pool areas, ballrooms, and kitchens. Poor IAQ has consequences on both the guest and the employee such as deteriorating health effects, headache, fatigue and loss of worker attention and productivity. Not only does it affect the guest and employee, it also affects the interiors of the building. Common problems include mold, mildew damaged wallpaper, warped windows and doors leading to increased building energy consumption and maintenance costs.

One of the most common problems, resulting in poor IAQ, is improper operation and maintenance of HVAC systems. The HVAC system ventilates, heats and cools the building, moves the air around the building via ductwork,

and filters to clean the air. HVAC systems have a significant impact on how pollutants are distributed and removed. If low efficiency air filters are installed airborne contaminants and odors will not be properly captured and can be dispersed throughout the facility.



The Palazzo in Las Vegas has been designated as the largest LEED certified building in the world by the U.S. Green Building Council, providing guests state-of-the-art Indoor Air Quality.



Clean air is vital for guests and conference attendees.

Ventilation systems begin with outdoor air. Outdoor air contains irritants such as pollen, airborne dust, and unpleasant odors, as well as nastier pollutants such as diesel and automotive exhaust, ultra fine dust, and molecular contaminants. These particles and gases are pulled into the building and circulated in the hotel environment, reducing the air quality. It is prudent to install and maintain HVAC system filters that can trap extremely fine particles.

To prevent health problems and lower energy and maintenance costs, owners and managers should regularly replace HVAC system filters. The most efficient filters possible should be used while maintaining the ability to supply adequate airflow. Ensure proper filter installation by installing in the correct orientation relative to airflow. Gasket and seat each filter properly to minimize any non-filtered air flowing around the filter

and into the airstream. When possible install air filters with a minimum MERV 13 efficiency. MERV 14 or MERV 15 filters provide even greater protection.

The next time you are on a trip for business or pleasure, look around your hotel room. Are there signs of poor IAQ? Is there a musty, stale odor or wallpaper peeling? Hopefully not but just remember the air you breathe is as important as the flat screen television you'll be watching.

DAFCO FILTRATION GROUP EXPANDS OPERATIONS IN CANADA



Continuing a history of exceptional growth and in spite of the global economic slowdown, Dafco Filtration Group is investing for the future. This is evident in the recent purchase of a new building with several additional acres of land for future development. The strategic location next door to the current head office in Mississauga, Canada, will help make the flow of manufactured products to the warehouse much simpler.

Future development will occur in two stages. The first stage ground breaking will occur this spring with an addition of 15,000 square feet, with the second stage to follow the spring of 2011. When completed the DFG Mississauga site will have approximately 120,000 square feet of manufacturing and warehouse space.

Other provinces such as Quebec and Alberta have also experienced substantial growth resulting in additional space requirements. Montreal, Quebec was the latest to acquire additional rental space for future growth. Additional equipment and space have enabled these facilities to become less reliant on head office for production capacity which in turn provides an improved level of service.

Our continued commitment to providing the industry with quality products, competitive pricing and the highest level of customer service and representation will better position Dafco Filtration Group to service our customers in any economic environment.

The average cost of a hotel room in the USA is over \$100 per night.

• Smith Travel Research

Dirty HVAC filters can contain up to 6,700 bacteria per gram of dust.

• IAQ Issues for Hotels
Chai-Chen Chao

Clinics from San Francisco to Boston specializing in travel health say almost 25 percent of patients who are frequent hotel guests complain about air quality.

• Wall Street Journal Report

Poor indoor air quality can cost you thousands of dollars in employee sick time and lost productivity.

• American Hotel & Lodging Educational Institute





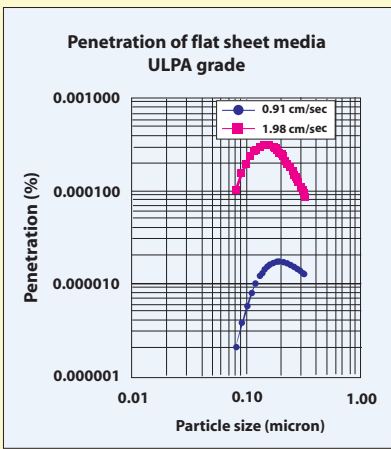
FilterTalk

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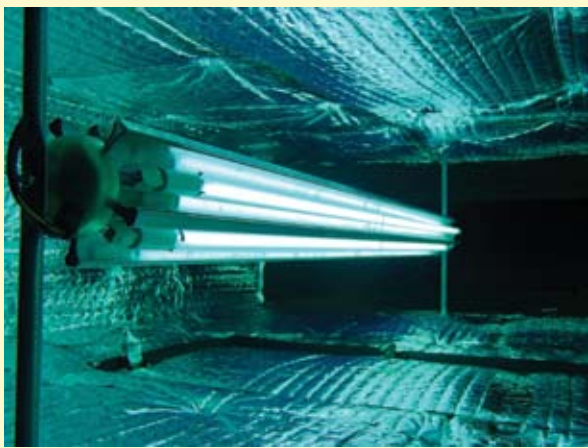
GOT A QUESTION FOR US?

Q. I have an application where I need to remove Nano Powder and the size is 0.001 micron. What filter should I use?

A. Traditional HEPA and ULPA filters should do fine. These filters are tested at the most penetrating particle size (MPPS), which is typically in the range of 0.1 to 0.2 microns. For particles larger or smaller than this size, the efficiency of the filter improves. For particles smaller than MPPS, the diffusion (or Brownian Motion) capture mechanism gets stronger, causing the particles to be captured by the filter fibers more easily. See below for a typical penetration curve for ULPA media, showing the decline in penetration (increase in efficiency) associated with particles smaller than the most penetration particle size.



Product Spotlight: Viostar Bio-Wall



Filtration Group's Bio-Wall UV Air Purifier is the state-of-the-art equipment choice for the destruction of airborne biological contaminants. Tested by the EPA (Environmental Protection Agency) & the National Homeland Security Research Center (NHSRC) against Biological Warfare Agents, the Bio-Wall provides a "barrier" of UVC light energy which destroys biological contaminants passing around it.

Installed in-duct parallel to the air stream for maximized contaminant dwell time, each Bio-Wall includes 5 high intensity 19mm pure fused quartz UVC lamps for the optimum destruction of biological contaminants including mold, bacteria and viruses. The Bio-Wall's UVC lamps are mounted to Anodized Aluminum Parabolic Reflectors that reflect the UVC light energy produced by the lamps a full 360° outward continually treating the entire duct to significantly improve Indoor Air Quality.

DELAYING AN AIR FILTER CHANGE CAN COST BIG MONEY

Times are tight in today's business economy. Facility managers and maintenance engineers are constantly pressured to reduce costs associated with heating and cooling buildings. Simultaneously they are expected to provide high levels of Indoor Air Quality. Some cut-backs make sense and are good managerial decisions. Other decisions can appear to reduce cost on the surface, yet actually increase the expense to operate an HVAC system.

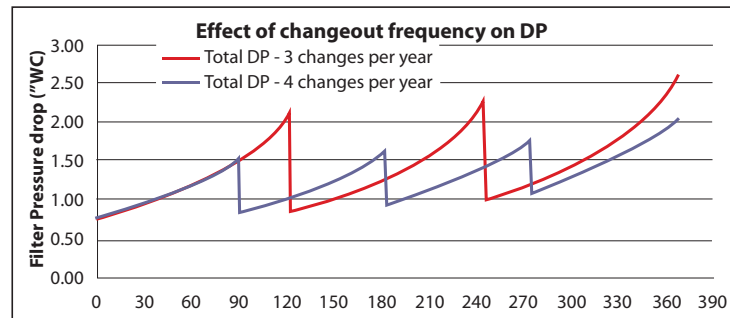
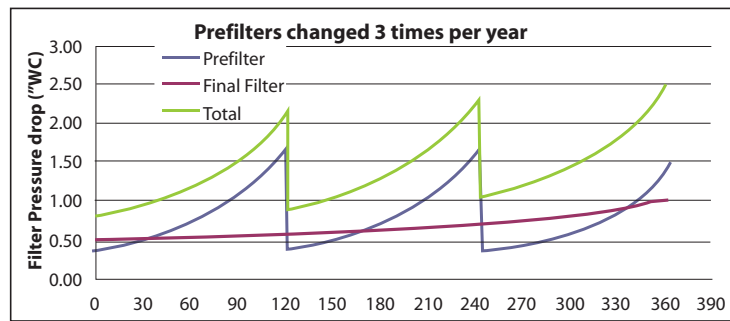
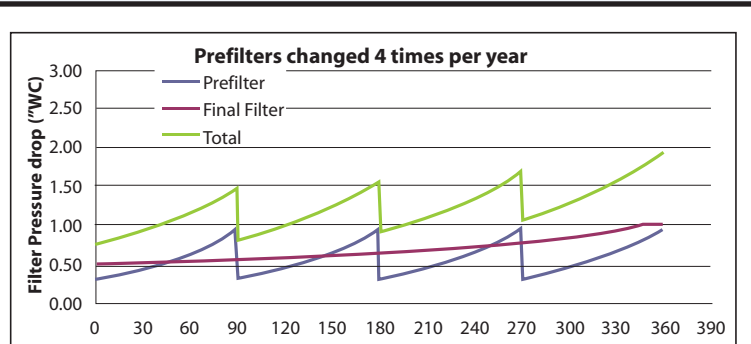
It is tempting to keep an air filter installed longer than scheduled in order to save a few dollars in replacement costs. Delaying a filter change can have a negative effect on energy consumption leading to dramatically increased energy costs. Pushing air through a dirty or clogged air filter results in an

increased resistance to air flow causing the fan to work much harder to maintain desired comfort levels and transfer efficiency across the coils.

Reducing resistance or "drag" by replacing a dirty filter with a clean fresh filter reduces the energy consumption associated with cleaning the air of impurities.

Air filters are inexpensive maintenance items. Even high efficiency air filters are relatively low-cost compared to the cost of energy. The gap between the initial cost of an air filter and the cost of energy to force air through an air filter is so great an engineering case can be made to install very low resistance filters even at a higher cost per filter.

Advances in materials and design allow high MERV rated filters to replace lower efficiency filters with no resistance premium.



Annual energy costs - prefilter changed 3 times per year \$52,083
 Annual energy costs - prefilter changed 4 times per year \$47,209
 Energy penalty due to delayed filter change **\$4,874**
 (Assumptions: vav system, 100 pleated filters, \$0.10 / kWh, 0.28" IR)

REPLACE AIR FILTERS REGULARLY TO LOWER TOTAL SYSTEM OPERATING COSTS

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