



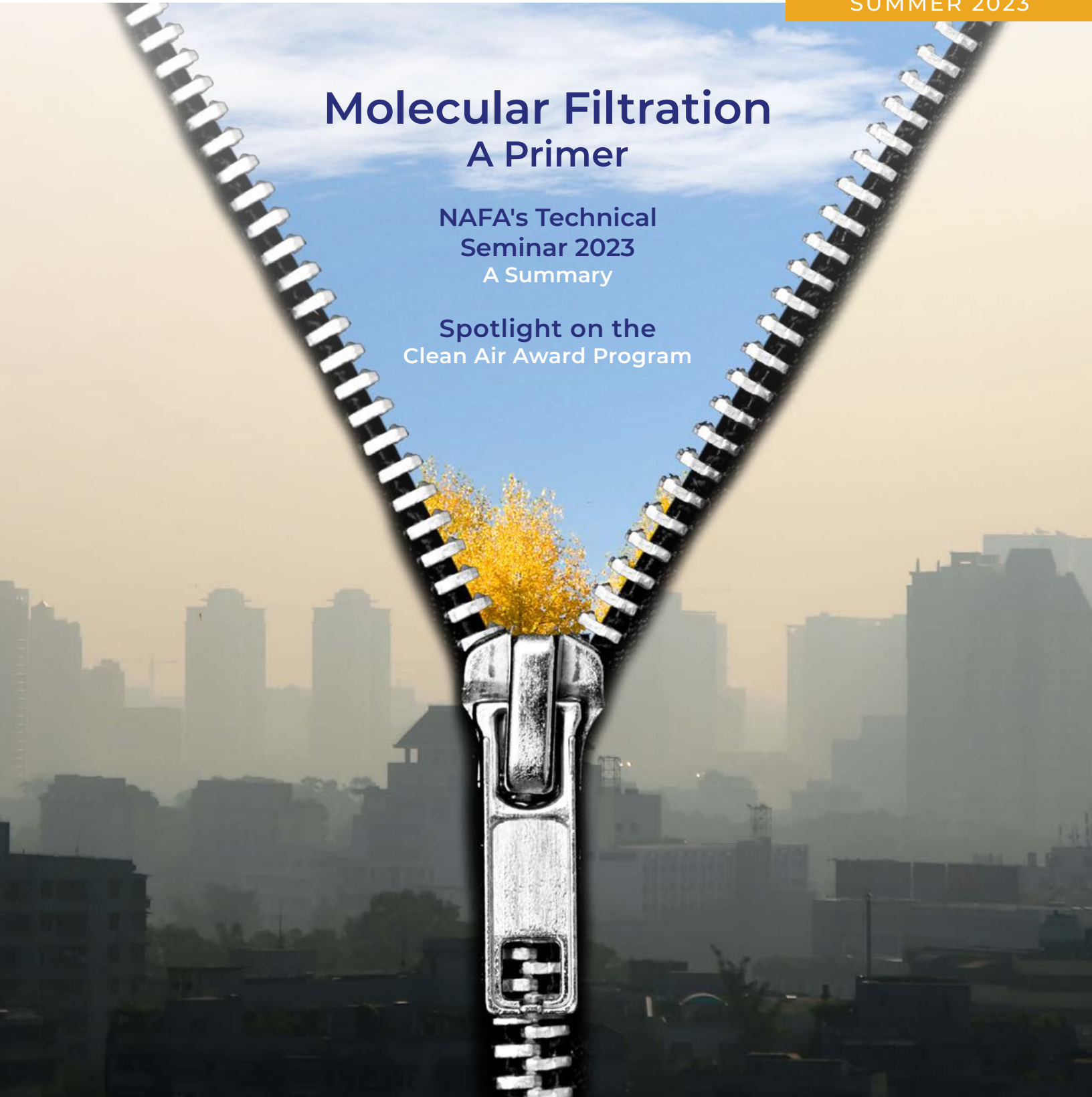
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SUMMER 2023

Molecular Filtration A Primer

NAFA's Technical
Seminar 2023
A Summary

Spotlight on the
Clean Air Award Program



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Air Media provides a forum for the free exchange of opinions and information. The views expressed herein do not necessarily represent those of NAFA, its officers, directors, membership or staff. Your contributions help make this magazine an interesting and informative forum for exchanging ideas and recognizing the advancements in our industry.

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PRESIDENT'S MESSAGE

MICHAEL CORBAT, CAFS

NAFA President

Vice President of Engineering, Rensa Filtration

TO MY FELLOW NAFA MEMBERS,

I want to start by saying thank you to everyone involved in the very successful Technical Seminar in Atlanta. We had a great set of speakers at a wonderful location. To the volunteers who put the presentation schedule together, led by President-Elect Patrick Rosenthal, your hard work paid off. To the staff, your leadership for our conventions has really allowed NAFA to thrive. Lastly, to those members who made it to the meeting, we appreciate the support. And to those who could not make it, please know that you were missed. I am personally looking forward to seeing what Secretary Steve Griffiths and his team put together for the Annual Convention in Nashville in September.

A year ago, when she was President, Roberta MacGillivray set forth a path of maintaining the focus on air filtration that Covid brought to our industry, and it is really beginning to grow roots. Those in attendance got to hear Jeff Littleton of ASHRAE speak of an in-development standard, which focuses on infectious disease control in buildings. He also mentioned the long-term need for an indoor air quality standard that would become code, and he has told me that NAFA is a critical partner in achieving this standard.

International Filtration News recently included a full reference to NAFA's "Recommended Practice for Filtration for Schools." I want to thank the entire NAFA Guidelines Committee for taking their personal time to write these standards that more people are finding and using. Your hard work is paying off.

Needless to say, the plan Roberta laid out is working and we at NAFA need to continue to push the importance of clean air, not

just for infectious diseases but for all types of contaminants that can affect the health of the average person. As we continue to move forward, NAFA's role is growing globally. We now have members from 17 countries from all over the world. Many of these members are sending representatives to participate in our conventions and to test for their NAFA certifications. NAFA has firmly established itself as a worldwide technical leader in air filtration.

Our work is not done yet though. Our committees are hard at work enhancing our footprint. For example, one goal is to release a new revision to the "Installation Operation and Maintenance (IOM) of Air Filtration Systems" later this year. The NAFA staff continues to look for partner organizations that we can collaborate with like ASHRAE. The NAFA Foundation is exploring ways to fund research in the area of air filtration.

This is the most exciting time for air filtration that I have ever been a part of, and NAFA is at the very heart of it. Remember that we have a great deal of hard-earned wisdom to share, and the best way to improve all our futures is to pass that knowledge on through education.

As always, NAFA thanks you for your continued support and I look forward to seeing those who can make it to the Annual Convention in Nashville on September 13-15.

Sincerely,

WELCOME TO NAFA

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MOLECULAR FILTRATION

HISTORY

The first documented use of activated carbon (known as charcoal) can be traced back to around 3750 B.C. when it was first used by the Egyptians for smelting ores to create bronze. By 1500 B.C. the Egyptians had expanded its use to healing intestinal ailments, absorbing unpleasant odors, and for writing on papyrus. By 400 B.C., the Ancient Hindus and Phoenicians recognized the antiseptic properties of activated charcoal and began using it to purify their water.

Between 400 B.C. and the 1800s, activated charcoal was used to remove odors from wounds, preserve water during ocean voyages, and to treat battle wounds by the military by removing toxins.

The earliest use of activated carbon for gas-phase contaminant removal dates to 1854, when a Scottish chemist invented the first mask that utilized activated carbon to remove noxious gases. Wood was originally used as the base material for gas masks since it was good at capturing poisonous gases when converted to activated carbon. By 1918, it was determined that shells and nuts converted to activated carbon performed even better than wood.

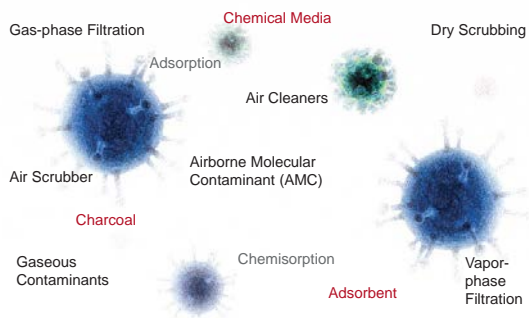
Around this same time, activated carbon began to be produced on a large scale and its use spread to decolorization in the

chemical and food industries. In the later 1900s, other industries such as sugar refining, gas adsorption, alcoholic beverage production and wastewater treatment plants began to use activated carbon.

Today, activated carbon is available in many different shapes and sizes and its applications are growing every day. For air filtration, the most common types of activated carbon are granular activated carbon (GAC), pelletized activated carbon (PAC), and structured activated carbon. In addition, other substrates such as alumina and zeolite are used in lieu of activated carbon due to their tremendous pore structures. The most common applications of these different media types include corrosion control, odor control, and protection from toxic gases.

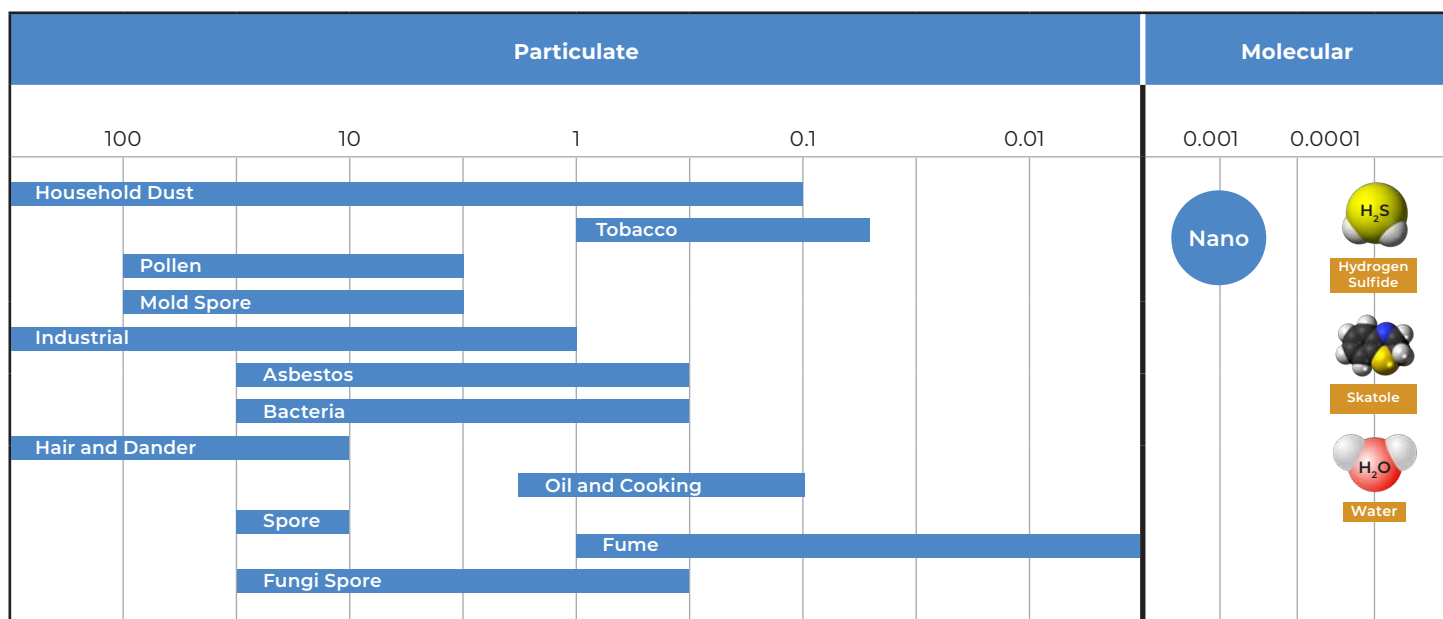
WHAT ARE GASEOUS CONTAMINANTS?

Gaseous contaminants are undesirable airborne molecules mixed with the normal molecular oxygen and nitrogen in the atmosphere. Because of their molecular size, in the sub-nano range, they are not visible. Also not visible, but present in the air, is desirable molecular water, which is referred to as humidity. Some common offensive undesirable gaseous contaminants are hydrogen sulfide, the rotten egg smell, or skatole, the dirty diaper smell. Many gases that evolve from combustion are contaminants, such as carbon monoxide, oxides of nitrogen, oxides of sulfur, and polyaromatic hydrocarbons.



SIZE – GASEOUS AND PARTICULATE CONTAMINANTS

The graphic in **Figure 1** illustrates the relative size differences of airborne contaminants. Some particulate contaminants, such as viruses and bacteria, although not visible, have a mass size large enough to be filtered with specialized particulate filters. Gaseous contaminants can only be effectively removed using molecular gas-phase filtration technologies.



Contaminant	Approximate Size (microns, 10 ⁻⁶ m)
Ozone	0.0001 – 0.0002
Acid Gases	0.0002 – 0.0004
VOCs	0.0002 – 0.0006
Terpenes/Hydrocarbons	0.003 – 0.0005
Butane/Ethanol	0.0004
Viruses	0.02 – 0.4
Smoke	0.1 – 1.0
Bacteria	0.2 – 10
PM ₁ (very fine)	≤ 1
PM _{2.5} (very fine)	≤ 2.5
Fungi Spores	2 – 10
PM ₁₀ (coarse)	≤ 10
Pollen	20 – 50

GASEOUS CONTAMINANTS
are undesirable airborne molecules mixed with the normal molecular oxygen and nitrogen in the atmosphere.

FIGURE 1

TYPES AND SOURCES OF GASEOUS CONTAMINANTS

Gaseous contaminants are generally classified as Odorous, Corrosive, or Harmful/Toxic. Examples of their sources are shown in **Figure 2**. Often, contaminants can be classified in more than one category. One example of this is hydrogen sulfide (H₂S) which is both corrosive and odorous.

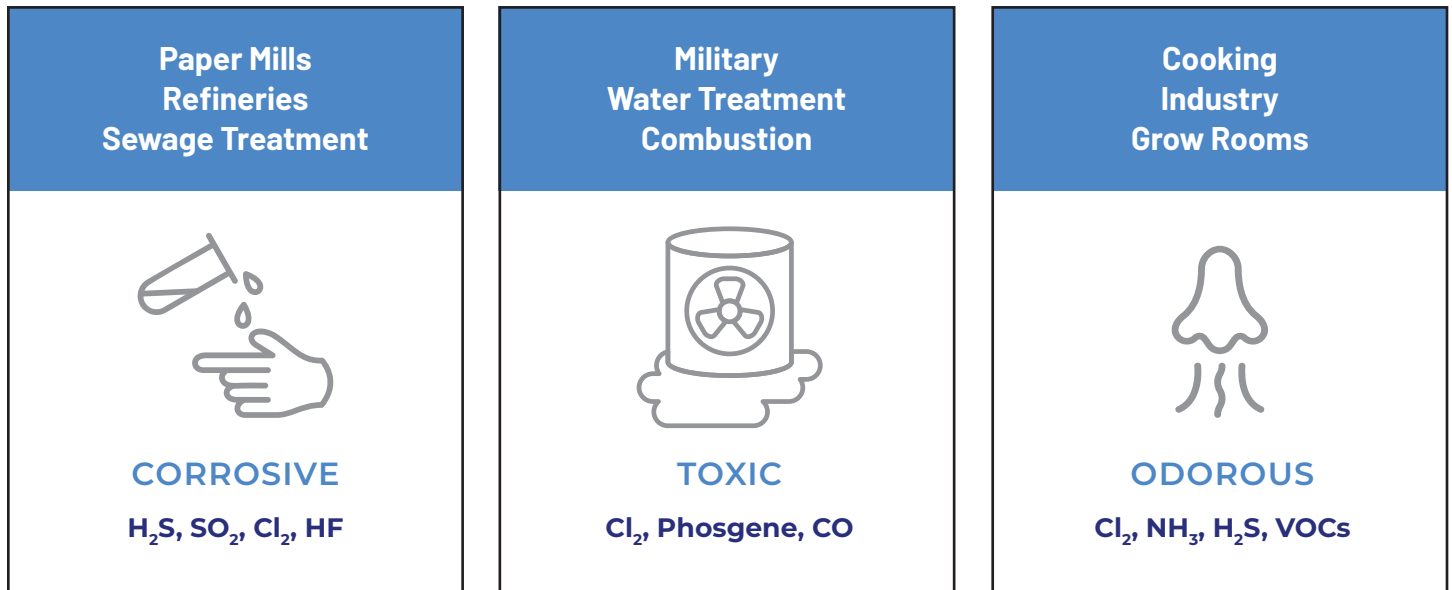


FIGURE 2

CONTROL OF GASEOUS CONTAMINANTS

There are various ways to control gas-phase contaminants. One method is source control wherein the source of the contaminant(s) is relocated or eliminated. A second technique is ventilation where large amounts of fresh air are added to the contaminated air to dilute the contaminants. Often, neither of these control methodologies will work. In these cases, gas-phase filtration systems must be utilized. A schematic is shown in **Figure 3**.

Gas-phase filtration devices are used in combination with particulate filters to remove gaseous contaminants. A particulate filter is always required upstream of the gas-phase filter to ensure that all dirt and dust is removed from the airstream. A particulate, final filter is recommended downstream of the gas-phase filter when the air is going to be recirculated back into an occupied space. The purpose of this particulate filter is to capture any dust that might come off the chemical media in the gas-phase filter. When the air exhausted to atmosphere, there is not a need for a final filter.

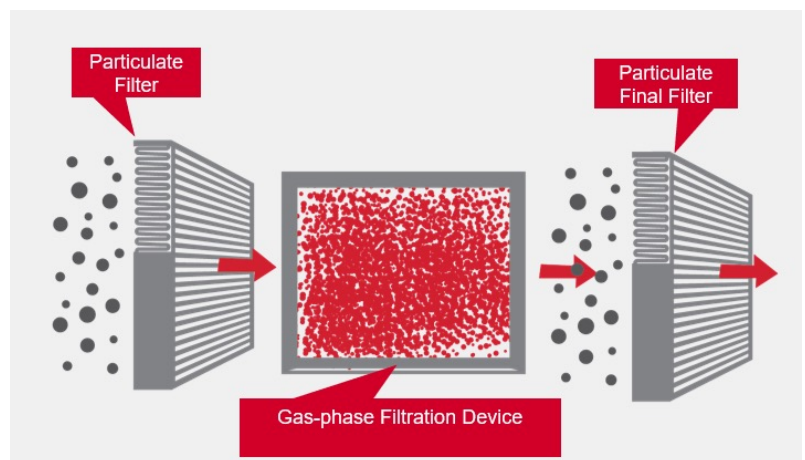


FIGURE 3

SELECTING GAS-PHASE FILTRATION DEVICES

Choosing the correct chemical media type and the correct chemical media delivery product is a daunting task. There is a lot of information that must be gathered first such as the contaminants of concern (COC) the concentrations of the COC, the air volume, the desired media life, the space available, and more. A good starting point is completing an application questionnaire like **Figure 4** right, to document as much of this information as possible.

The gathering of the data is the first step in determining the correct media type. In most applications, there is one chemical media type that will work best. There are times, however, when more than one media type will work as well as times when more than one media type is required as part of the solution due to the list of contaminants that need to be removed. To further complicate matters, there are multiple chemical media delivery devices that are available and most of the time, more than one of those devices will work. The amount of space that is available along with number of media types required are the two main factors that will determine which delivery device will best solve the application at hand. Due to this complexity, it is recommended that you reach out to your local filtration specialist to assist you with making the proper selection.

Gas-phase Product Application Questions

What is the size of the space to be protected?

Height(ft) Width(ft) Length(ft) Volume(ft³)

What is the airflow that is required?

Airflow (ft³/min)

What contaminants are present and in what concentration?

Contaminant: Average Concentration (ppb): Peak Concentration (ppb):

What are the operation times?

Average Peak: Hours/Day Days/Week Weeks/Year

Are there any dimensional constraints?

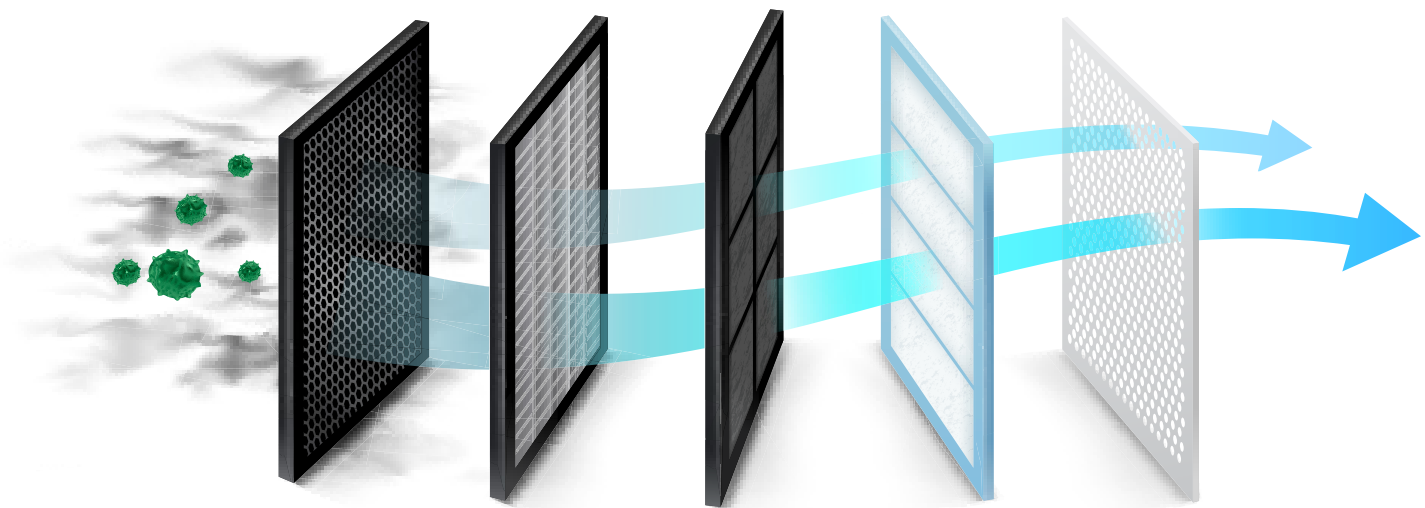
Max. Height(ft) Max. Width(ft) Max. Length(ft)

How many passes of media can be used (1, 2, 3, or 4)?

What is the desired media life in months?

What are the performance requirements? (electrical/electronic corrosion protection, ISA G1 environment, odor control, etc.)

Notes:





THE MINIMUM VIABLE PRODUCT

The minimum viable product is usually determined by the customer or end user and is defined as the minimum acceptable service life of the filtration device before the chemical media removal capacity is exhausted.

Figure 5 below demonstrates how there is usually more than one viable product solution for most gas-phase applications.

The table shows the expected life in months versus the contaminant challenge for various gas-phase filtration products. The gray boxes show acceptable products for roughly a three-month minimum life and the light blue boxes show acceptable products for a six-month minimum life. When evaluating a gas-phase application, it's important to understand the most important requirements for that application such as first cost, replacement cost, ease of replacement, and space available so the best product value is chosen.

	VOC Concentration (PPB)				
	10	25	50	100	1000
1" Pleat	1.8	0.7	0.4	0.2	0
2" Pleat	2.2	0.9	0.4	0.2	0
4" Pleat	2.6	1.1	0.5	0.3	0
12" Pleat	6.9	2.7	1.4	0.7	0.1
12" V-Bank	24	9.7	4.8	2.4	0.2
1" Cassette	36	24	24	6.1	0.6
3" Cassette	36	36	36	12	1.2

FIGURE 5

REMAINING LIFE ANALYSIS

When the best chemical media has been determined and the filtration device has been selected, the question of how long this filtration device will last often comes up. The manufacturer of the filtration device should be able to provide an estimate of expected life of the chemical media. To verify that estimate, the remaining life of the chemical media can be tested. Remaining life analysis compares the known, initial capacity to the current capacity of chemical filtration media that is installed in filtration systems. The information obtained from this testing can be used to confirm system performance, determine the media replacement schedule, and to assist with inventory control of replacement media. Replacing media based on testing maximizes the media life, reducing the total cost of system ownership.



DAVE SCHAAF
Gas-phase Product Manager
AAF Flanders

Dave is involved with the design of gas-phase filtration systems and the management of AAF Flander's gas-phase filtration products.

He has over thirty-five years of engineering and manufacturing experience in the HVAC industry. Prior to coming to AAF Flanders, Dave worked as an Engineering Manager at Trane, Engineering and Manufacturing Manager at Purafil, Engineering Manager at Nailor Industries, Engineering Manager at MWV, and Engineering Manager at Freudenberg Filtration.

Dave graduated from the University of Louisville with a BS and MS degree in Mechanical Engineering. Dave is actively engaged in gas-phase filtration technical committees within ASHRAE and is the former co-chair of ISA 71.04.

AAF Flanders, the world's largest manufacturer of air filtration solutions, operates production, warehousing and distribution facilities in 22 countries across four continents.

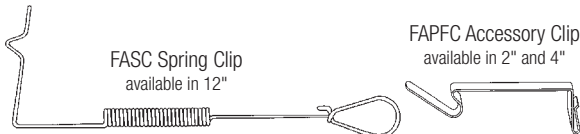
With its global headquarters in Louisville, Kentucky, AAF Flanders is committed to protecting people, processes and systems through the development and manufacturing of the highest quality air filters, filtration equipment and containment housings available today.

AAF Flanders was formed in April 2016, when American Air Filter Co. Inc., doing business as AAF International, acquired Flanders Corp., now a wholly owned subsidiary. The combined company offers comprehensive, innovative air filtration solutions designed to remove and control airborne particulates and gaseous contaminants in residential, commercial, industrial, cleanroom, transportation and nuclear power applications.

AAF Flanders is supported in our international ventures through the resources of our parent company, Daikin Industries Ltd., based in Osaka, Japan, a diversified international manufacturing company and a global leader in air conditioning.

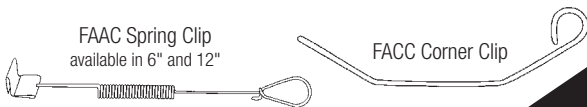


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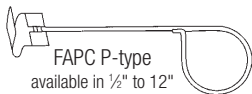
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EXECUTIVE PROFILE

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COMPANY HISTORY

With centuries of combined experience, our team of industry leaders serves the Americas with manufacturing operations across the continents. Our target markets include commercial and industrial accounts, specifically wholesale and residential channels.

Our customer-first and family-oriented principles make us professional yet personal in our business strategy. With a strong desire to leave a legacy for our communities, MANN+HUMMEL strives to improve the air filtration industry and create products that lead to better health and wellness for our customers.

How did you get your start in the filter industry?

Shawn started in the air filtration business at 15 years old as part of a high school co-op where he worked his way up the ladder through various roles. His experience in the industry includes positions in engineering, production, scheduling, product management, R&D, sales & most recently executive leadership.

In 5 years, as a company, Shawn hopes to see MANN+HUMMEL with a strong hold on the Americas market as the number one company with the highest revenue and continuing to grow both organically and through acquisitions. Personally, in 5 years, Shawn hopes to still be at the helm of the Air Filtration Americas team, continuing to drive the vision of one team with one goal surrounded by his amazing team.

How do you motivate your employees?

Shawn is big on respect, trust and listening to employees. Communication is also key. Shawn says that if people do not communicate with one another, then they cannot build trust and if they cannot trust each other then they cannot participate in trying to work toward common goals and if you're not working

toward common goals together then there is much dysfunction. So providing an environment that builds trust, respect and gives employees a voice is how Shawn keeps his employees motivated. *He makes us feel like we're humans that matter — not some number or a pay scale. He cares about us and our families. He asks about our personal lives and wants to make sure we're happy and enjoying our work. He also presents us with opportunities within the company to "move up" or change positions if he thinks we have a skill set or talent that could be used in other areas. He just genuinely cares.*

Did you have a business mentor and if so, who is/was it?

Yes, three main mentors really stick out and have impacted Shawn greatly. Al Longton really showed him the ropes coming into corporate Americas as a teenager, walked him through early engineering. Charlie Kwiatkowski helped him transition into the sales role, how he conducts business, small tasks like the importance of answering calls and emails timely, meeting customer expectations and handling situations that may not always be positive. Harry Smith took Shawn under his wing on the business acumen side on things like knowing how to run a business, how to generate profit, how to grow and scale things from ground zero.

What's the best piece of advice anyone ever gave you?

"Best advice I've ever gotten in business is it's a marathon, not a sprint." You shouldn't make decisions out of desperation but do things at a sustainable pace. "There's going to be times when you need to run, not walk, but you've got to have a pace that's steady because you need to be able to make it for the long haul."

MANN + HUMMEL

What is the most challenging aspect running a filter company?

"The people dynamic. The personnel capital is the most difficult part of running the company — especially over the last 5 years. The labor dichotomy in the US has completely changed and will never been what it used to be. People are your most important asset and can also be your most difficult to manage because every single person has different personal goals, challenges, motivating factors, lives and backgrounds. You have to be able to adapt the way you manage people based on the specific individual you're interacting with at the time."

What do you think is the biggest challenge the air filtration industry currently faces?

"The labor pool. If you'd have asked me 24 months ago, I'd have said supply chain but that's starting to settle in now. It's still a concern but not nearly as much as the labor pool. The ability to keep plants staffed and reduce turnover is a difficult task. Have to rehire, retrain, restaff, just creates a constant cycle which can lead to inefficiency if it's not managed well."

Do you have any words of wisdom for up and coming filter professionals?

Really study what we do and why it's so important. Get a decent command and understanding of why what we do is important and the science behind it. Then have a passion for it that can carryout to the rest of your organization.

How has your company benefited from NAFA membership?

One of the big visions of Pamlico Air and ultimately MANN+HUMMEL Air Filtration Americas has been being a truly distributor-based company and not selling direct. That in itself, directly ties us to NAFA because NAFA is probably the biggest collection of filter distributors in one place in the world. So our membership allows us to network and to be involved in technical committees and showcase what we have to offer at the annual convention and technical seminars. NAFA will run hand in hand, always, with MANN+HUMMEL Air Filtration Americas, because it's where our customers go for air filtration industry expertise, knowledge, and technical and social interaction and we want to always be a part of that.



Cleaner Air For A Cleaner Planet

We have joined the United Nations Global Compact. This means that we not only report in accordance with the requirements of the Global Reporting Initiative but also provide information on our progress in the areas of action of the UN Global Compact.

We are pursuing our "Carbon Zero" strategy: In it, we set a goal for ourselves to make our own production and ultimately our entire value chain completely CO₂-neutral by 2050.

We received a gold medal in the EcoVadis sustainability ranking: This puts us in the top 5 % of companies in our industry rated by EcoVadis.

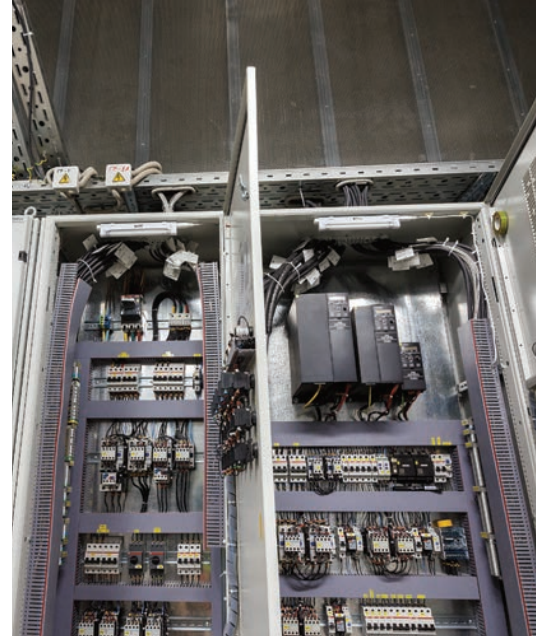
We create sustainable, innovative filtration solutions for real applications. Sustainability is not just a buzzword for us. We take action towards it!

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APRIL 12–14, 2023
ATLANTA, GEORGIA

NAFA TECHNICAL SEMINAR

The National Air Filtration Association (NAFA) held its annual Technical Seminar, from April 12-14 in Atlanta, Georgia. The event attracted 253 professionals in the air filtration industry who gathered to network, share best practices, and learn from an outstanding lineup of speakers.

Susan Frew's "Compete on Awesome Not on Price" presentation discussed how Sunshine Home Services (a plumbing and HVAC company) grew 535% in just one year with a strategic, laser-focused marketing plan and "12 Points of Love" with its customers. Her keynote provided step-by-step instructions on capturing reviews, delighting customers, and competing on awesome instead of just price.

Dave Schaaf (AAF Flanders) and Shawn Gilstorf (D-Mark) covered the fundamentals of molecular filtration in HVAC Systems in the session on Molecular Filtration in HVAC Systems. They explained the concept of molecular filtration, its difference from particulate filtration, and the necessity of molecular filtration in HVAC systems. The session also discussed various standard molecular filtration products, their selection process, and replacement guidelines for new and existing HVAC systems.

Lisa Ryan discussed "Smart Strategies to Retain Top Talent" in industries facing talent shortages. She emphasized post-pandemic adaptation, focusing on technology, community, and collaboration. Adjusting employee engagement and communication strategies is crucial for the next normal.

In Jeff Thibodeau's (Mikropor) session, attendees discovered exclusive NAFA tools to stand out in the market. Thibodeau showcased the "Personal Assistant Document," which utilizes

NAFA Best Practices Guidelines for enhancing clients' HVAC and filtration systems. Adopting these guidelines enables clients to win a NAFA Clean Air Award, boosting client loyalty and luring prospective customers with FOMO. This method promotes business growth and heightened client retention.

One great part of TechSem2023 was the NAFA Foundation Event – Topgolf outing. This offered superb networking and funded NAFA Foundation partially. In a major announcement, the NAFA Foundation board decided to raise scholarship awards from \$1,000 to \$2,500. Eligible are immediate family of NAFA member firms' employees, including children and grandchildren. The board raised \$4000 at the seminar through a combination of top golf registrations and donations!

Participants at TechSem2023 shared positive feedback on the seminar. One attendee stated, "The seminar was great! I really enjoyed the presentations and the committee meeting." Another praised the event, saying, "This was a great way to network with other professionals in the filtration industry. Excellent topics, and your speakers all did a great job."

NAFA couldn't do any networking or education without its fabulous sponsors! Thanks to our sponsors, who helped us have a great time in Atlanta!

NAFA's TechSem2023 was a remarkable success that offered invaluable learning opportunities, built industry relationships, and showcased innovation in air filtration.



"This was a great way to network with other professionals in the filtration industry. Excellent topics, and your speakers all did a great job."



SPOTLIGHT ON THE CLEAN AIR AWARD PROGRAM

Cadillac Fairview (CF)

Wholly owned by the Ontario Teachers' Pension Plan, CF manages in excess of \$40 billion of assets across the Americas, Europe and Asia. The company's Canadian portfolio comprises 68 landmark properties, including the Toronto-Dominion Centre, CF Toronto Eaton Centre, Tour Deloitte, CF Carrefour Laval, CF Chinook Centre and CF Pacific Centre.

Through previous successful filter trials at other CF locations, Camfil was awarded the primary supplier of all CF sites in Western Canada. Leary began to work with all of the CF locations during the middle of the Covid Pandemic and had to ensure to abide by recent changes to ASHRAE 52.2 and NAFA recommendations and guidelines.

After completing site surveys and education with the following 5 office and retail asset classes in Alberta, Canada, CF found they could eliminate 33-8yd bins from landfill, reallocate **15 weeks of labour** over the next 2 years, simply by upgrading their air filtration to a MERV 9A and MERV 13A respectively and changing based on pressure differential instead of time. They also had to ensure that they were maintaining very high-quality indoor air quality to ensure to pass 3rd party testing. All of the sites have BMS systems monitoring energy usage through head office and will continue to provide filter testing with each site through their BMS and on-site with portable AHU.



Clockwise, from above:

CG Calgary City Centre
Encor Place
Chinook Centre
638 8th Avenue
Shell Centre

OFFICE

Shell Centre is a 33 floor, 630,000 SF office tower. This tower was using a mixture of roll media and pads as prefilters that had a very high initial pressure drop with low particulate capture. In November, 2021, Camfil suggested to remove all roll filters and prefilter media to install the single stage MERV-13A Hi-Flo ES with thick gasketing to ensure no bypass. This site was changing pads every 2 months and final filters every 18 months. By eliminating the prefilters they have gone from 13 changes every 2 years, to just 1 and eliminated over 1,200 pads to the landfill annually.

638 8th Avenue is a 26 floor commercial office tower that opened in 1983 and was voted BOMA building of the year in 1996 in the under 500,000 SF category. Being an older building the main AHU's still had roll filter media and the compartmental units still had pad holding frames. The building had converted their compartmental units to MERV-13 pleats at the beginning of the pandemic, but by suggesting to add clips to the units it saved the team lots of time on the install/removal. The main AHU's were suggested to use a single stage Camfil MERV-13A Hi-Flo ES with a 2 year guarantee and removed the roll media entirely.

CF Calgary City Centre is a 37 floor office tower, with LEED Platinum certification. With the building being newer, space was an issue as all AHU's only were able to fit a 2" prefilter and 4" final. The 2" filters were upgraded from a MERV 8 standard capacity (changed quarterly) to a MERV 8A high capacity filter changed on pressure differential. The 4" filters were changed to a Camfil MERV-13 pleated option. This site will too be implementing a trial with Camfil's MERV 9A pleated option with a 12-month guarantee for further reduction in waste and labour.

Encor Place is a 28 floor commercial office space housing the CF Calgary head office. This facility has two unique features: column-free floor plates and four-sided silicone glazing on exterior. With over 250+ heat pumps being changed by a contractor, better performing filters were a must to try and cut down the change frequencies and future cost negotiations. They were using MERV 8 standard capacity filters in all heat pumps that were being changed semi-annually. In June 2022, they switched to Camfil DUAL 9 MERV-9A pleated option to cut down changes by at least 50%. Because the heat pumps are return air, Camfil will be completing testing on site to prove life expectancy. Main AHU's were using MERV 8 standard capacity

pleats changed quarterly and MERV 13 synthetic bags changed every 18 months. Encor Place was converted to Camfil DUAL 9 MERV 9A pleated filters and Camfil MERV 13A Hi-Flo ES pocket filters to decrease labor and waste by 75% and maintaining a lower average pressure differential.

RETAIL

Chinook Centre is the largest mall in Calgary covering 1,377,768 square foot space with 250+ stores, restaurants and a Cineplex movie theater on the property. They recently partnered with Enmax to install 1,900 solar panels on the roof to help with clean, renewable energy and lower their carbon footprint. Camfil found that they were previously using MERV 8 standard capacity pleated filters and MERV 13, 12" V-filters in the professional tower main AHU. Because there was no coil in-between 1st and 2nd stage filter banks, Leary tried to utilize the single stage Hi-Flo ES, but they still wanted to keep a prefilter. They converted to MERV 9A DUAL 9 pleated filter with 12 month warranty to ensure protection of final filter with huge savings on labor and waste, but stayed with the idea of the MERV 13A Hi-Flo ES with similar pressure differential to the 12" V-style and cost savings on the filters themselves. With over 200+ FCU's in tenant spaces and 40+ RTU's (previously MERV 8 SC pleats) for the common spaces they upgraded to the MERV 9A DUAL 9 with 12-month life expectancy. This is a 75% reduction in labor and waste from the previous change schedule. This will allow their operations and maintenance team to build capacity to attend to the many important daily tasks, while ensuring their equipment is properly protected with a premium filter.



Leary successfully nominated all five CF facilities for the 2022 Clean Air Award.



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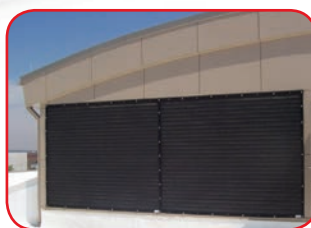
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FOR IMMEDIATE RELEASE MEDIA CONTACT:

Karen Buckley Washington
Senior Public Relations Specialist
kbwashington@ashrae.org

ATLANTA (April 20, 2023) – The technical program for the 2023 ASHRAE Annual Conference, taking place June 24–28 in Tampa, Fla., is now available online and in the ASHRAE 365 app.

The conference includes more than 100 sessions within seven conference tracks on a full range of built environment topics, including urgency of addressing the climate crisis, measures to reduce human impact on the natural environment and strategies for making the built environment more resilient and sustainable. In-person and virtual attendees will have access to all sessions in the program (and PDHs) through June 2024.

Conference tracks and highly anticipated technical sessions are as follows:

PATHWAYS TO NET ZERO ENERGY AND DECARBONIZATION

Session: The Building Decarbonization Strategy Game

RESEARCH SUMMIT

Session: Networking Forum for Researchers in the Built Environment

FUNDAMENTALS AND APPLICATIONS

Session: Future Data Center: Road Map to Liquid Cooling Facility Design, Implementation and Operation

FUTURE PROOFING THE BUILT ENVIRONMENT

Session: Chatbots and Nextgen AI Technologies for HVAC Industry

HVAC&R SYSTEMS AND EQUIPMENT

Session: Best Practices: Testing, Verifying and Commissioning for Indoor Air Quality and Pathogen Mitigation

BUILDING AUTOMATION AND CONTROLS

Session: ASHRAE 223P: A First Look, Emerging Tools and New Use Cases

PROFESSIONAL DEVELOPMENT AND EDUCATION

Session: Engineer to Entrepreneur: Case Studies in Business Ownership

Conference papers and extended abstracts will be added to the conference schedule by May 24. Papers will be scheduled in a mix of traditional paper sessions and poster sessions.

ASHRAE Learning Institute (ALI) will offer 10 courses during the conference, all approved for continuing education credits toward maintaining P.E. licensure.

Four new courses are being offered:

- V in HVAC – Efficiently Improving IAQ using the Ventilation Rate Procedures (Using Advanced Options for Standard 62.1-2022)
- Introduction to Building Decarbonization
- Starting the Path to Net Zero Buildings Using ASHRAE 90.1-2022
- Fundamentals of Decarbonization Design Systems and Equipment Applications

ASHRAE certification exams will also be administered during the week and business, committee and technical meetings will be conducted in the weeks leading up to, and during the conference.

In addition to honors and award recognitions, updates from Society leaders and the installation of new officers, incoming 2023-24 ASHRAE President Ginger Scoggins, P.E., Fellow ASHRAE, will present her inaugural address and share the Society theme for the coming year, "Challenge Accepted: Tackling the Climate Crisis."

In-person and virtual registration options for individuals and companies are available.

For complete information and registration for the 2023 ASHRAE Annual Conference, visit ashrae.org/2023annual.

ABOUT ASHRAE

Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating ventilation, air conditioning, refrigeration, and their allied fields.

As an industry leader in research, standards writing, publishing, certification and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

The Society is showcasing integrated building solutions and sustainability in action through the opening of the ASHRAE Global Headquarters building in metro-Atlanta, Georgia.

For more information and to stay up-to-date on ASHRAE, visit ashrae.org and connect on Instagram, LinkedIn, Facebook, Twitter and YouTube.

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Each year NAFA awards three (3) \$2,500 scholarships that honor students who demonstrate outstanding personal and academic characteristics.

The program closes August 1 of each year. [Visit the NAFA Scholarship page](#) for more information. If you need assistance, please send an email to nafa@nafahq.org or call staff at 608-310-7542.

The scholarship competition is open only to the immediate family of NAFA Distributors, Manufacturers, Supplemental, or family members of employees of NAFA member firms. For this program, grandchildren of NAFA members are also eligible to compete.

All applicants must submit their academic information, a 1-2 page typewritten essay addressing work experience, career objective, leisure interests and activities, as well as two letters of recommendation. All applications are evaluated anonymously by the NAFA Past Presidents, and winners of the scholarship are announced at the Annual Convention.

The NAFA Scholarship helps make the dream of a college education a reality for the winners. We encourage all NAFA members to become involved in the scholarship competition.

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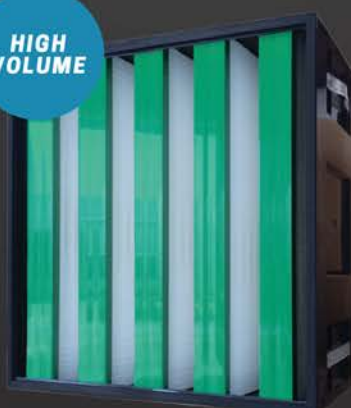


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INDUSTRY CALENDAR



2023

ASHRAE Annual Conference

June 24 – 28
Tampa, Florida

NAFA NCT II Hands on Training and Testing

July 12
Des Plaines, Illinois

Healthy Buildings ASIA 2023

July 16 – 19
Tianjin, China

HVACR VIETNAM

July 25 – 27
Hanoi, Vietnam

NADCA Technical Conference

September 6 – 9
Grapevine, Texas

2023 ASHRAE Building Performance Analysis Conference

September 11 – 13
Austin, Texas

NAFA Annual Convention

September 13 – 15
Nashville, Tennessee

IFMA World Workplace

September 27 – 29
Denver, Colorado

22nd Expoacaire Cartagena

September 27 – 29
Cartagena, Colombia

FiltXPO

October 10 – 12
Chicago, Illinois

ACCA Next Level

October 16 – 17
Indianapolis, Indiana

NEBB Annual Conference

October 26 – 28
Monterey, California

RETA Conference

November 14 – 17
Jacksonville, Florida

Eighth International Conference on Energy Research and Development

November 28 – 30
Kuwait University City, Kuwait

2024

2024 ASHRAE Winter Conference & AHR Expo

January 20 – 24
Chicago, Illinois

CTI Annual Conference and Expo

February 4 – 8
Houston, Texas

NADCA 35th Annual Meeting & Exposition

March 4 – 6
Las Vegas, Nevada

ACCA 2024 Conference and Expo

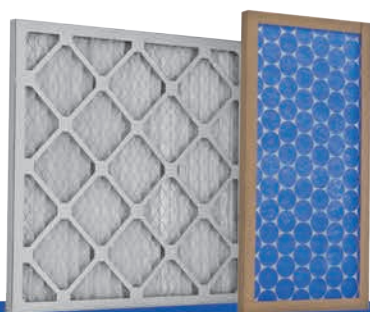
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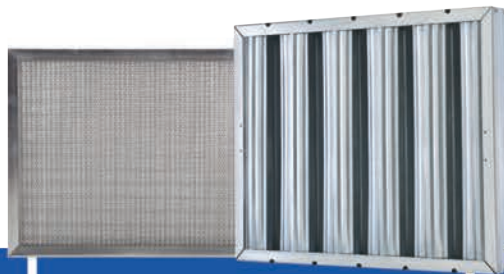


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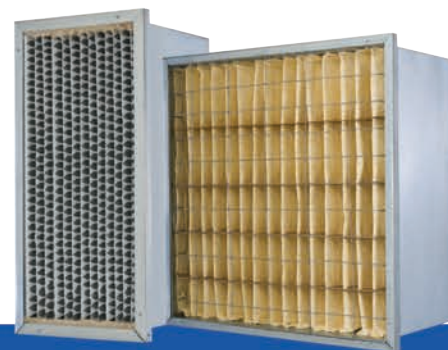
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FROM THE EXECUTIVE DIRECTOR

EMILY BARDACH, CAE
NAFA Executive Director

I'm Emily Bardach, Executive Director of the National Air Filtration Association (NAFA), and I'm excited to share information about our Clean Air Award.

What is the Clean Air Award?

The Clean Air Award is a prestigious designation in the Air Filtration Industry that recognizes leaders who have demonstrated excellence in air filtration, maintenance practices, and maintaining a clean and healthy indoor work environment while minimizing operating costs. As we continue to focus on indoor air quality in a post-pandemic world, it's more important than ever to recognize those prioritizing clean air and promoting good filtration practices.

Who can participate?

NAFA invites its members and any air filtration professionals who want to nominate a facility to submit a Clean Air Award nomination. We want to recognize the champions of clean air in our community and encourage similar practices across the industry.

The deadline for award nominations is August 1, 2023. Facilities interested in earning a Clean Air Award must speak with their HVAC/air filter service providers and get involved in the association. Among other criteria, NAFA's Clean Air Award application includes additional points for facilities that work with Certified Air Filter Specialists (CAFS) and NAFA Certified personnel, maintain filters and equipment manufactured by NAFA Members, and those in critical categories like sustainability, economic benefits, and innovation. [Visit our Clean Air Award web page for more information.](#)

Building owners and facility managers should seek a Clean Air Award as it promotes and recognizes high-efficiency filtration products, proper installation and maintenance practices, and encourages happy, productive workers. Running a "healthy

building" improves indoor air quality and reduces airborne illness, translating into a healthy bottom line. Moreover, facilities that have earned the Clean Air Award in the past are eligible for the Clean Air Award Renewal Certificate.

What are the benefits for you?

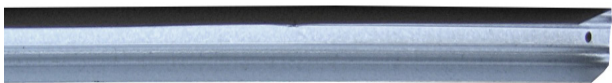
NAFA members that nominate their clients for the Clean Air Award enjoy many benefits, such as strengthening business relationships, receiving global recognition, increasing business retention, and elevating the profession. Additionally, NAFA Certified Personnel receive two CEUs towards recertification if their nomination is accepted. Members that help their clients earn and renew awards annually have a high business retention rate.

Winners of the Clean Air Award receive a physical award and a window sticker to display. NAFA recognizes each award winner in an annual press release and social media and provides them with an award media kit to promote their accomplishment.

Ready to Nominate?

The Clean Air Award is a unique opportunity to recognize leaders that set an example for others to follow by prioritizing clean air and promoting good filtration practices. Whether you're a building owner, facility manager, or an air filtration professional, we encourage you to work with NAFA on nominating your clients' facilities for NAFA's Clean Air Award. Together, we can improve the air quality in our community and beyond.

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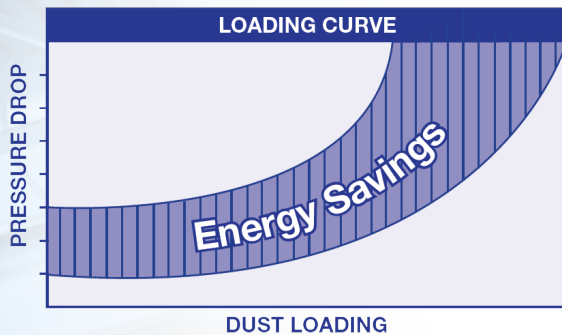


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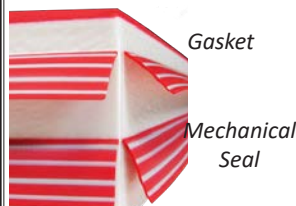
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