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JOURNAL

OF THE INTERNATIONAL KITCHEN EXHAUST CLEANING ASSOCIATION

Serving the Commercial Kitchen Exhaust Industry Worldwide

The IKECA Journal is an industry publication for cleaners, fire marshals, insurance professionals, facility managers, vendors and other interested parties in the commercial kitchen exhaust cleaning and inspection industry.

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Letter from the IKECA President

From the Desk of the President

Randy Rauth, CECS



I hope everyone had a safe and enjoyable summer. I am very excited about our fall technical conference in Houston, TX and look forward to welcoming all. Let's all chip in and help support this community during our visit! Please set aside time and volunteer.

I love the kitchen-exhaust cleaning industry and continue working for recognition of exhaust cleaners. This requires a huge commitment by cleaners to do the right thing when no one is watching, educate yourselves, and become involved in your communities. Realize what an important part of the fire-protection industry you are!

IKECA conferences provide us with the educational opportunities to gain knowledge—to earn and maintain

certifications that symbolize our professionalism. Being involved in our association is the best way to stay current with best practices, safety standards, and manufacturers' newest technologies.

Our commitment to education never ends, and our newest endeavor—online courses—will provide opportunities for generations to come. Although I believe attendance at our conferences is the best way to learn, socialize, and connect with the local communities, this new alternative promises to reach those not able to travel and take time away from their businesses.

These new expanded training opportunities will also help in bringing new employees on board faster and more qualified than ever before. I hope to hear your input in Houston and add to our great history.

Randy

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IKECA Member News

In Memory of Bernard Besal



It brings us great sadness to share the passing Bernard Besal. To say that he'll be missed is an understatement. His journey in this life crossed the paths of many and touched the lives of an uncountable number of people. We mourn the loss of a leader in our industry and a good man.

A dear friend of Barney's stated, "a gentleman is someone who puts the comfort of others before himself," and by this definition Barney was truly a gentleman.

Bernard was a founding member of the International Kitchen Exhaust Cleaning Association. He served as President and on multiple committees. He has been instrumental in bringing our Association to higher levels of credibility and recognition through his work on the Board of Directors, as a Chairman of the ANSI Standards Development Committee and his work with the NFPA 96 Standards Technical Committee. Barney was influential in the development of the Certified Service Agent program for Gaylord Manufacturing, which has benefited so many around the world.

Barney has left behind a family that loved him dearly, a group of friends that will be at a loss without him and an industry that

will likely never again see a man of such character, devotion, and passion.

Barney always left more than he took. This attribute in him contributed more to IKECA than any single influence, and what made him so memorable to us. His dedication and generosity will be painfully missed.

So many of us have benefited from the tireless efforts of this true leader, including countless food service facility owners and operators; his life's work has saved lives. Because of his giving of himself and his willingness to elevate the industry, there is no way to know how many people have benefited from his work.

Bernard Besal reflected the character, described by Theodore Roosevelt, as a man who contended in the arena of life. Undoubtedly, there were times where he was bloodied and bruised, but he contended. Barney not only contended, but he was a victor in the life he lived.

In the measure of things that matter, the love he has shown and the good he has done, will be memorialized in the hearts of those he has left behind.

Barney, we will miss you.

New Member Benefit: IKECA Fast Facts

It has always been beneficial to inform authorities having jurisdiction (AHJs) and facility managers of IKECA's commitment to fire prevention and life safety. However, communicating these messages has never been the easiest thing for IKECA member companies to do. To better support the marketing efforts of our members, IKECA has partnered with the Laidlaw Group to provide members with free downloads that can be used in a variety of digital marketing channels.

IKECA Fast Facts provides a quick way to deliver relevant data about fire risks to the kitchen exhaust system end user. IKECA Fast Facts pairs a relevant statistic or fact with an eye-catching image.



One of the ways these **IKECA Fast Facts** can be used is supporting your efforts in leveraging social media to build influence and position your company as an informed industry leader. Educating local fire officials, facility managers, restaurant owners, and the risk-management industry is just one way in which you can build your company's influence.

IKECA Fast Facts are located in the "Members Only Downloads" section. A suggested social media usage guide is provided to best target AHJs and facility managers. New IKECA Fast Facts will be provided every quarter. Log in to www.ikeca.org and learn more about this exclusive member benefit.

Featured Articles

Hiring the Right Employees

By Brian Smith, Ph.D.

Part three of a three-part series of articles: Hiring the Right Employees (IKECA Journal, Spring 2017), Onboarding New Employees (IKECA Enews – Second Quarter 2017), Communication: The Key to Employee Retention (IKECA Journal, Fall 2017).



Communication—or the lack of communication—is the number one reason why employees leave an employer (for reasons not associated with advancement or personal issues, such as a spouse moving). You can review the history of terminated employees at most companies, and the root cause ends up being something to do with failed communication.

What never ceases to amaze me is how simple communicating with employees can be. The most powerful tool you have in communication is your spoken word, privately to an employee. Spoken words followed up by supportive action will show tremendous results. Second to this is the use of banners, newsletters, emails, social media messaging, and text messages; however, all should be used in support of your spoken word, policy, and procedures.

It is imperative that you develop a high-level communication program within your organization if you wish to retain employees and eliminate high turnover. A simple periodic email to the team with some company updates goes a long way toward increasing communication and building company culture.

Other ways to do this include the following:

- Have an open-door policy at all times. However, do not usurp the authority of lower-level managers.
- Encourage and reward discussion from all employees during meetings while staying within the meeting agenda and goals.
- Establish activity targets and rewards for everyone in the company.
- Talk with each employee personally and consistently; everyone must know management's way of communication.
- Challenge employees by using the “praise/mentor/praise” method of communication.
- Discipline, “mentor,” in private to keep employee ego and self-esteem intact.
- Praise/recognize/praise! Identify wins more often than you challenge mistakes.
- Write letters to employees for important accomplishments. They will be reread and will motivate with dividends.

After communication standards are in place, they should be supported by company policies and procedures. Offering tools to employees to be successful will enable them to focus on the key aspects of their jobs. Task lists and other tools will provide them practical ways to stay organized. Empowerment to complete what is expected goes a long way toward helping an employee feel trusted and supported by your organization. Communication and policies and procedures will outperform and outlast the most qualified person in an environment lacking any of these qualities.

Employee engagement is truly affected by increased communication; by this, I mean the actual day-to-day relationship the company has with employees leads to higher employee engagement. This engagement needs to reinforce the interview and onboarding process by carrying through the structure and support identified already. Engagement is an ongoing process and is a great way to ensure employees are productive and stay with your organization.

Communication isn't just about giving employees direction. It's also about listening to them. The company should always listen to the most played communication in the company: WII-FM (what's in it for me?). Performance measurement, for example, is a two-way street in organizations. Employees are constantly measuring their peers, supervisors, and the company overall.

Devoting time to getting to know your employees and their values, personalities, interests, and motives will go a long way toward creating long-term employees. Use your policies and



procedures to develop a consistent approach to getting to know each employee; maintaining that relationship will also help to better define your corporate culture, which is another key component of long-term employee retention.

Employee retention is not about being nice. High turnover is not about being too demanding or having expectations that are too high. Successful organizations have increased communication with their employees, especially during the hiring process. Onboarding a new employee should pick up that consistency and detail, make the new employee feel welcome, and provide a path to being productive that is clear and structured. Once the employee is integrated, he or she should become a valued part of the team right away. Sharing the vision of a company and its progress enables employees to have a better understanding of where the company is headed and how they fit in. Enabling employees to do their jobs with the necessary tools and information creates engaged employees who perform and grow with and for the company. Mentoring employees and using mistakes as learning opportunities solidifies trust throughout the organization and provides a culture of progress. Implementing an employee separation procedure that helps to identify their view of the company as they leave gives you some behind-the-scenes data you can use to refine your business in a multitude of ways.

My final thoughts on employee engagement are to use the S.M.A.R.T. management approach:

S: Specific. Make sure all communication is clear and concise and that you get confirmation that everyone understands what is expected.

M: Measurable. Put a yardstick to tasks; if you cannot measure it, you cannot control it. People naturally give more attention to activities that are measured.

A: Attainable. Make sure the person being hired is being trained properly and is given the tools to accomplish what is expected of him or her.

R: Reasonable. Establish reasonable goals and get consensus. Setting unreasonable goals alienates your employees and becomes the root cause of poor quality, job failure, lack of safety, and a demoralized team.

T: Timely. Maintain timelines and check progress. Have a beginning, milestones, and an end. Review progress and look for exceptions; exceptions can be your friend and expose good and bad issues that can be rectified quickly.

In the end, people want a work environment in which they feel secure, appreciated, and understood. They will gravitate toward structure and the goals of the company in these environments, and they will stay on as valuable contributors to your organization.

Brian Smith is senior managing partner at IA Business Advisors and the managing partner at Omni Containment Systems, a leading manufacturer of NFPA 96-compliant grease containment, hinging, and access products. He has spent his 27-year career consulting for businesses around the world and holds a Ph.D. in organizational psychology, a M.S. in information management systems, and a B.S. in accounting. Smith is also a Master Six Sigma Black Belt; has served on numerous business, educational, and charitable boards; and is a Rotarian.



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Integrity

It's Importance to the Future of IKECA

By Mark Eckert, CESI



I have been in the grease-exhaust system cleaning industry for almost 18 years. In that time, I have often thought about the importance of both personal and corporate *integrity* and the importance of what it means within what we do as fire-prevention professionals. It has always been important to me personally, and I have required that it be equally important to whoever I have represented as my employer. Fortunately, I have been

employed by companies that have held this characteristic as the basis for all that they do with respect to meeting their professed responsibility to fire prevention. More specifically, I have been fortunate to have been a member of organizations that made it their first duty to properly remove *all* of the stored fuel throughout the total grease-exhaust system. The benefit to both myself and the organization in sharing this same commitment to integrity has resulted in, most importantly, safe kitchen grease-exhaust systems. Also, it has led to personal and corporate financial and developmental success overall.

In the paragraphs that follow, I hope to encourage others to think about the importance of this *integrity* to their operations, to their companies' future success, and to the success of IKECA. We can and should speak often about integrity in our meetings and publications. However, if we fail as association members to *apply and monitor* this truth with regards to the quality of our work (removing stored fuel in every service to every client), the result could be that IKECA will no longer be distinguished from all other certification and would-be responsible bodies. Make no mistake about it; we are already challenged in this way.

The Value

As an organization, we all recognize the importance of lifting up NFPA 96 and the IKECA/ANSI C10-2011 standard as benchmarks, measuring rods of what we say we represent. These standards are included in what we say to a potential client with respect to why our membership is most often superior to non-IKECA

contractors and why the investment in partnering with an IKECA member is worth any additional expense.

From Webster's Dictionary (noun): *Integrity*. The quality of being honest and having some moral principles; moral uprightness.

From Wikipedia: *Integrity* is the qualification of being honest and having moral principles, moral uprightness. In ethics, *integrity* is regarded by many as the honesty and truthfulness or *accuracy* of one's actions. *Integrity* can stand in opposition to hypocrisy...

The Challenge

To continue to grow as an organization, we need to recruit new membership. Part of that marketing is the importance of holding ourselves to, particularly, these standards. We advertise it well when we recruit.

Unfortunately, inspections by many of us of non-IKECA and some IKECA members have revealed less than what these standards represent, less than what we, as an organization, require of ourselves. Any noncompliance can be serious, even life-threatening, and is unacceptable to us as fellow IKECA members who follow these guidelines. Not encouraging each other to remedy shortcomings will not resolve these matters. We all wish our organization to maintain a quality standard of its own for years to come. If we, as company management and company owners, accept cleaning less than what is called for, we will fail in the long run. Folks, it is imperative that we not just "talk" about the quality of our workmanship (as it relates to *the standard*); we must *hold our workmanship* to this standard. If we don't hold our own crews accountable, as well as each other, we will begin to fail as the organization "brand" that markets ourselves to customers as solely committed to fire protection. Indeed, we will end what so many long-standing quality IKECA members built over the years and will be thought of as any other hood-cleaner organization. Quality must be paramount—not price. Sacrifice price and require integrity from your techs. This will help ensure a restaurant's future success, our companies' success, and a future to our valuable organization.

Mark has been active in the KEC industry since 2000. He is an IKECA Certified CESI and, is an executive with Enviromatic of St. Paul/Minneapolis Minn. His very broad and varied experience has made him one of the more respected professionals in our industry.



Creosote and Restaurant Kitchen Grease Fumes

Three Recommendations for Insurance Underwriters and Fire Authorities

By Eric Dyer, Kescor, Inc.



The hottest concept in the U.S. restaurant industry in 2017 is the wood-fired grill. New chains are opening every day to capitalize on this trend, and older restaurants, such as Applebee's, are investing to keep up. In 2016, Applebee's invested \$75 million to retrofit its nearly 5,000 stores to feature the mouthwatering smoky flavor these open-flame cooking appliances deliver. Customers can see the smoke wafting out of the top of the restaurants and can smell the hickory

aroma from blocks away. To the pleasure of owners, it drives in the business.



However, newly released information from fire studies about the dangers of creosote mixed with grease are revealing a dangerous trend that affects the safety of kitchen staffs, the public, and first responders alike. Old attitudes toward routine maintenance must be changed to avoid loss of life and property, and it all

starts with restaurant hood filters and the number **165**.

Purpose of This Article

Fire and insurance-industry authorities must look more closely at hood filters when inspecting commercial kitchens. If hood filters appear old, damaged, or dirty or are just missing from the hood, the restaurant is operating illegally and possibly creating safety hazards. Unfortunately, commercial kitchen operators sometimes need a nudge to do the right thing, and with hood filters, the time is always *now*.

Hood filters are the first line of defense for restaurant kitchen exhaust systems to prevent flames and flammable debris from entering exhaust ducts. They are also the primary grease-removal devices for airborne kitchen exhaust fumes. However, in wood-fired-grill cooking, when creosote and grease are mixed together and hood filters are not properly cared for, they stop providing protection and become a major fire hazard in and of themselves.

Filters are required to meet regulations outlined by the National Fire Protection Association (NFPA), the International Fire Code

(IFC), and insurance code and are regularly enforced by fire and health inspectors. Restaurants must have the right type of hood filters for their cooking and properly maintain them. Filters must be in good condition and kept clean, inside and out, to do their job. Exhaust hood manufacturers recommend replacing all hood filters every two years, at a minimum, or as frequently as *every 6 months* at high volume or in high-heat locations *because internal components fail*. When filters are not properly maintained, they can cause a lot of other facility systems to fail down the line. And, in the case of filters over wood-fired appliances, this failure could be deadly.

NFPA 96 4.1.5 states, "The responsibility for inspection, maintenance, and cleanliness of the ventilation control and fire protection of the commercial cooking operations *shall be the ultimate responsibility of the owner of the system* provided that this responsibility has not been transferred in written form to a management company or other party" (emphasis added). For restaurant hood filters, this responsibility includes the following:

- Ensuring all exhaust air passes through the grease filters.
- No gaps exist between filters (top or sides).
- Filters should not be crushed, bent, or distorted.
- All filter baffles should be present and in good working order.
- All filters should be the same type, from the same manufacturer.
- Filters must be clean, inside and out (less than one eighth inch of grease buildup).



Of this list of responsibilities, grease clogs are the most critical. Grease-clogged hood filters exponentially increase the risk of exhaust-system fires in restaurant kitchens for numerous reasons. For the scope of this article, I focus on the biggest danger that a grease-clogged filter can face: creosote.

Creosote is created by kitchens that use solid fuel, such as wood, to cook with. "Creosote is a black, oily, wood-tar condensate that forms inside of hoods, filters, and ductwork when burning wood in cooking systems. Creosote tar is carried into the exhaust system as a smoke vapor but quickly condenses into a liquid as the smoke comes in contact with cooler metal surfaces.

When the creosote deposits cool, they harden to a shiny black coating that can be difficult to remove, especially if the creosote deposits are left over a period of time. Creosote will continue to accumulate on surfaces until it is removed or burned. Once ignited, the creosote deposits burn at very high temperatures, so hot, in fact, that, depending on the amount of creosote that is burning, a runaway fire can occur, making a sound like a roaring freight train.”



Flash Point in the Hood

Definition: The lowest temperature at which a flammable liquid can form an ignitable mixture in air

According to the Chimney Safety Institute of America (CSIA), certain conditions encourage the buildup of creosote, including *restricted air supply*, unseasoned wood, and cooler-than-normal chimney temperatures. If creosote builds up in sufficient quantities, according to the CSIA, and the internal flue temperature is high enough, the result can be a chimney fire. The Cornell Cooperative Extension Service reports that chimney fires “can start quickly and be very powerful, shooting flames many feet above the chimney cap and producing a loud rumble like a freight train.”

Research has determined the flash point of wood-tar creosote to be **165°F** (74°C). Thus, all it takes to ignite creosote in filters, hoods, and ducts is a single spark, burning ember, or flame—all of which are constantly present in solid-fuel cooking.

“...the flash point of wood-tar creosote is 165°F...”

Auto-Ignition in the Exhaust

Definition: The temperature at which vapor ignites spontaneously without an ignition source

Creosote’s auto-ignition point, which does not require an ignition source, is 451°F (233°C) or the same as *paper*—which makes sense because both substances are derived from wood. This temperature is significantly lower than the auto-ignition temperature of just grease, which can increase the potential hazard. The combination of creosote and grease in exhaust-hood plenums and ducts can be easier to ignite than creosote alone and can burn hotter.



Fire Point

Definition: The temperature at which a substance will continue to burn after ignition for at least five seconds

In addition, if a flash-point fire occurs in or on a hood filter and fire-point temperature is reached, the heat could be great enough to create auto-ignition fires in other parts of the ductwork system as the exhaust fan continues to pull superheated air through the system. Or additional flash-point fires could erupt as burning embers continue to get pulled through the superheated system.

Source of ignition: For a flash-point fire to occur, a source of ignition is required. With a solid-fuel cooking system, this can be a single airborne spark or ember. If you have ever watched a restaurant cooking with an open flame broiler, you know that thousands of burning embers rise into the hood filters every day. This is the reason spark arrestor filters are required in these type of hoods.

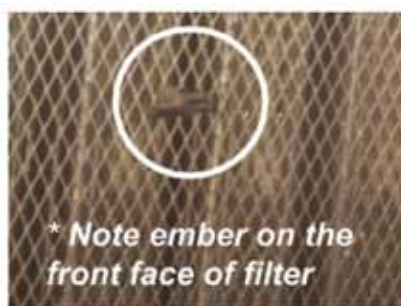


Note: This picture was taken at a Charlotte-area restaurant during my research.

Spark arrestor filters: These have a screen attached to the front face of the filter to prevent burning embers larger than a half inch from entering the filter.

NFPA 211 Chapter 1.11.2 (b) states, “The arrestor screen shall have heat and corrosion resistance equivalent to 19-gauge galvanized steel or 24-gauge stainless steel,” and (c) states, “Opening shall not permit the passage of spheres having a diameter larger than 1/2” nor block the passage of spheres having a diameter of less than 3/8.”

However, a flash-point ignition can still occur with a small burning ember that penetrates the half-inch gaps or a large burning ember that sits on the screen of the filter and introduces a spark to the creosote vapors. So, if hood filters are clogged with grease and creosote, a single burning ember could be enough to start a fire in the filters *regardless of the cleanliness of the rest of the hood system.*



Although spark arrestor filters improve the fire readiness of a restaurant hood system, they cannot prevent a fire if they are loaded with grease. In addition, if they are grease-clogged, they will slow air speed and trap more heat, increasing the likelihood of a flash-point fire.

Research: In my research to prepare this article, I visited several Charlotte, NC, area restaurants that used wood-fired grills as their featured cooking appliance. For tools, I used an anemometer to measure the speed of air passing through the hood filters, a laser heat gun to measure temperatures on the face of the filter above the wood-fired grills, and a handheld luggage scale to measure filter weight. To keep my findings consistent, I measured airspeeds, temperatures, and weights of the filters located directly above the center of the wood-fired grills.



Findings: I routinely found airspeeds as low as 275 feet per minute, temperatures in excess of 210°F on the front face of filters, and one to three pounds of extra weight in each filter.

Airspeed: NFPA 96 8.2.1.1 states, “air velocity through any duct shall be not less than 152.4 m/min (500 ft/min),” so anything less, especially over a wood-fired grill, creates a very dangerous scenario. More typical airspeed findings for these types of hoods are in the 600–900 feet per minute range. Heat is the biggest enemy for these hoods, so removing as much hot, greasy air as quickly as possible is the goal.

By taking airspeed measurements using the restaurant’s existing spark arrestor filters and then retaking the same measurements (minutes later) using our clean filters (same type/manufacturer), we were able to get an airspeed comparison.

On average, we recorded an increase in airflow by more than 135 feet per minute. No other changes were made to the system except removing grease-clogged filters and replacing them with filters 100% clean on the inside.

“...increase in airflow by more than 135 feet per minute.”

Note: In all cases, the kitchen staff was cleaning the filters every night after close by soaking them in a soapy water solution and then rinsing them in the morning. The filters “looked” clean on the outside but were grease-clogged on the inside.

Temperature: Temperatures on the front face of the restaurant’s filters measured between 190°F and 210°F (directly above the wood-fired grill). Repeating the same steps we took for measuring filter weights, we took temperature readings after we placed new, clean filters in the hood and found an average temperature drop of 57°. *Note: The temperature drop alone removed the threat of a flash-point fire!*

“...an average temperature drop of 57°.”

Weight: Filter weight was measured to determine internal grease buildup. There is no way to open a regular hood filter to see buildup, so we used the “dirty” weight and measured it against the new filter weight from the same manufacturer. For the purposes of this study, we boiled out the filters in the FilterShine soak tank and were able to restore the filters to their original manufactured weight. In every case, we boiled out one to three pounds of internal grease buildup in each filter.

By definition, the environment was ripe for a flash-point fire in every single hood that we tested. All that was required was a single burning ember reaching a grease-saturated



hood filter. *Note: These filters were all soaked by the kitchen staff overnight—every day of the week—and appeared to be clean. In some of the kitchens we tested, we were able to remove more than 15 pounds of internal grease from the filters of a single hood alone.*

If a flash-point fire would have occurred in or on any of these filters, the internal grease buildup would have liquified and spread the fire to the surrounding filters, ductwork, and plenum area. Once this happened, the air temperature throughout the entire exhaust system would quickly rise past 451°F and set the stage for auto-ignition fires in other parts of the exhaust system.

To recap, auto-ignition is the lowest temperature at which any volatile solid or liquid spontaneously ignites in normal atmosphere *without* an external source of ignition, such as a flame or spark. So, even if the fire itself did not spread to other areas of the exhaust system, the superheated air could cause other independent fires to spontaneously erupt.

Variations to wood-fired grills: Some newer-model appliances burn wood and natural gas simultaneously. The wood is not used as the source of heat for cooking, but instead, it is smoked at low temperatures for flavor. On first look, these systems appear to be a safer design; however, when wood is burned at a lower temperature, it produces even more creosote tar because none of the vapors are getting burned up. So, per NFPA 96, these hood systems must be inspected and cleaned monthly—the same as their open-flame cousins—as they are just as dangerous, if not potentially more so.

Impacts on Fire-Suppression System

Proper exhaust airspeed means less grease buildup on the fusible links and other components of the fire-suppression system. When links are coated with grease, the grease acts as an insulator and could result with the system not discharging at the intended temperature or not at all. And because heat is the primary enemy, today's fire systems are not designed to keep creosote/grease fires out. They are only designed to put them out once, and because the heat will still be there after the fire is put out, it can reignite with just another single burning ember. As stated in the recent report by Doug Horton, an industry expert and consultant, "Fire Risk from Solid Fuel Commercial Cooking" (available at <http://m.csemag.com/articlepage/fire-risk-from-solid-fuel-commercial-cooking/2e2f8d059cef9cb6fadcd191406b08bba.html>), "Reports of fires with solid-fuel cooking confirm that creosote increases risk, and surprisingly, conventional fire suppression systems are being reported as not detecting or extinguishing related fires in hoods and ducts."

For companies such as Captive Aire, water is the answer. After their suppression systems put the fire out, they are now using secondary systems that mist water to cool hot surfaces to prevent flash-point flare-ups. In a January 2017 article, "Fire Suppression for Solid-Fuel Cooking in Commercial Kitchens" (available at www.captiveaire.com/

[Resources/Articles/Fire%20Suppression%20ES%20Jan%202017.pdf?v=142017](http://www.captiveaire.com/Resources/Articles/Fire%20Suppression%20ES%20Jan%202017.pdf?v=142017)), Doug Horton discusses the new advanced technology fire-suppression systems Captive Aire is developing, such as the core fire protection system, which works to extinguish fires and keep them out for good.

The Filter Exchange Process

Grease-laden filters are removed from the hood by the exchange company and are replaced by 100% clean—inside and out—matching, perfectly fit filters. The dirty filters are then taken off-site and boiled clean using the correct chemicals and cleaning processes. This ensures that when the filters are reinstalled clean on their next rotation they operate in top condition, like new. When filters are clean inside, grease collects on the baffles and drips down through the weep holes in the bottom of the filter. From there, the grease drains through the grease troughs of the hood and finally into the grease-collection cups below. This process keeps the grease moving and minimizes the fuel load in the filters and hood. Otherwise, grease-clogged filters trap grease, slow air speed, and cause liquid grease to build up in exhaust ductwork.

For restaurants that cook with wood, we recommend a weekly or twice weekly filter exchange service to keep air flowing and minimize buildup. The key is to keep temperatures below 165° in the hood. Restaurants not cooking with wood can be serviced on a biweekly or monthly program. Because our filters are delivered 100% clean inside and out, they stay cleaner and safe longer. In this way, our filter-exchange process can eliminate the daily staff responsibility of cleaning the most important fire-protection component of the exhaust system.

Recommendations

- Require a heat-measuring device be kept in every kitchen to ensure the temperature never rises above 165°F without the staff knowing about it.
- Require a posted, written log to record hourly temperatures on the front face of the hood filters above the grill.
- Require all hood filters in wood-burning hoods to be replaced every six months with new spark-arrestor filters.



Restaurants that fail to meet these standards should be held 100% liable for all flash-point-related fire damages. When kitchen operators are educated and mandated to monitor their own hood systems, they will know when a problem is developing before a flash-point fire erupts and be able to take action.

The small expense of replacing hood filters is nothing compared with the cost of a fire, especially if someone is injured. Clean, fully functional spark-arrestor filters are not an additional expense; they are a critical part of the price of doing daily business. And when a filter-exchange company will clean and replace the filters as part of its program, it is a no-brainer for savvy restaurant operators.

Conclusion

Hood filters can no longer be ignored or treated as shiny window dressing for the kitchen hood. Filters must be inspected, cleaned, and replaced on a regular basis as part of ongoing fire-protection efforts regardless of whether they are in a wood-burning kitchen hood or a regular commercial hood. All hood filters can cause fires.

Restaurant operators are ultimately responsible for the care of their entire exhaust system. By using a professional filter-exchange service, they will find that they save money and labor as well as greatly improving their fire safety. All filters used in exchange programs are high-quality stainless steel and are kept

in top working condition as part of the program. When they are worn out, they are replaced free of charge, and the integrity of their fire protection is maintained.

Kitchen staffs are not properly equipped to remove internal filter grease. If this grease is not removed, it will inevitably lead to serious problems. With a routine, professional, filter-exchange program, all of the internal filter grease is removed, exhaust air keeps flowing, worn-out filters are replaced as part of the program, and temperatures remain below flash-point levels, thus removing the problem.

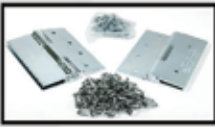
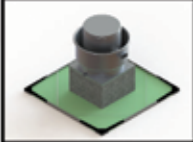
Eric Dyer is a retired Army Intelligence Officer, a 15-year owner of a commercial kitchen exhaust cleaning company, a 7-year owner of a FilterShine USA dealership and a 5-year authorized distributor of the Grease Lock Filter System. Eric has an MBA from Webster University and a BA from Indiana University of Pennsylvania. He is a member of IKECA, PWNA and the North Carolina Restaurant and Lodging Association. Eric is a frequent continuing education guest speaker for North and South Carolina fire fighting organizations and fire suppression companies. He has successfully lobbied local governments to put tighter water pollution controls in place to protect stormwater from exhaust cleaning waste water. Eric is on the board of Directors for FilterShine USA and is a Supporting Partner of Elemental Impact (a national non-profit committed to bringing sustainable operating practices to the corporate community).



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Be the Leader

Keeping Safety Up Front

By Dennis Poulin, CECS, R&G Vent Cleaning Services, Inc.

We know that safety does pay. The proof is in the annual E-Mod rating directly impacting workman's compensation premiums. For all the lip service we give toward developing a culture of safety, we need to back it up with behaviors that support the verbal fanfare.

We've turned safety into a common agenda; it is the primary and dominating topic of our monthly shop meetings. Every individual is responsible for contributing toward the goal of zero workplace injuries. The message is clear: "We Can Improve Anything IF We Want To." We post this around the office and shop and have applied this mindset to every aspect of our business.

We pay bonuses to our crews when they identify hazards at the customer's facilities and follow up with those customers to illuminate the hazards before our next scheduled service.

I might be playing with the subliminal messaging, but the last thing our crews see when leaving our shop is large placards with the "Global Harmonization Pictograms."

There is lots of help among your KEC colleagues, and IKECA has been a great facilitator, keeping us focused. If you're doing something that has made a difference in your company's safety performance, share it with us. If all we ever did was satisfy minimum standards, any expectation for improvement would likely be minimal as well. So do more and get more—good leadership is always appreciated.



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Refrigeration and Freezer Maintenance

A New Cleaning Service Area with Big Potential

By Richard Fennelly



Background

Companies now doing kitchen hood cleaning and/or nonresidential duct cleaning are missing a lucrative and sorely needed collateral cleaning service that is widely ignored and quite ripe for picking. Here's our analysis.

Cooling appliances ("coolers") have condenser coils that are responsible for throwing off to the atmosphere the heat that has been extracted from the chamber holding the items intended to be refrigerated or frozen. To facilitate that heat-exchange process, these coils—when contained within the appliance's cabinet—have airflow directed through their structure by a fan in the condensing unit. All matter of dust and debris are also drawn in with the air, causing clogging of the coils over time. Foster Refrigerator (UK) has stated that an airflow reduction of about 95% can be expected over a one-year period of operation. Experts recommend frequent coil cleaning to insure good airflow—often at periods of every three to four months as a minimum and even more frequently in extremely dusty or dirty environments.

Why Condenser Coils Need Such Frequent Cleaning

Clogged coils cannot effectively throw off heat because the dust and debris forms an undesired insulation layer. The refrigerant flowing through the unit gets too hot (resulting in high pressure) and starts damaging other components, the system draws higher amperage, run times increase, the refrigerant degrades restricting its flow, and so forth. A number of undesired things can happen as a result:

- **Energy waste:** Recently, data available from a field survey in the United States has shown that the amount of energy needed to operate the appliance can increase by as much as 90% to 100%—at the Australian electric rates and converted to Australian dollars, this amounted to a yearly, per unit increase ranging from \$AU554 to \$AU1,575 with the average being about \$AU1,083. Multiply this by the number of refrigeration units in a typical facility, and you get really big numbers.
- **Malfunction of the unit:** If the unit runs with clogged coils, you may face an emergency service call, which can lead to a very expensive service call involving proper removal of the refrigerant gas and teardown of the system. It can lead to four to six hours of labor with parts costing \$AU1,250 to \$AU1,750. In extreme cases, the unit might need to be replaced.

- **Loss of valuable product inventory:** If the unit begins to malfunction, it may not be able to maintain the target temperature within the enclosure being cooled, leading to compromise of the integrity of the item(s) being refrigerated. This, in particular, might be of grave concern to the health-care industry.
- **Shortening of the life of the unit:** Malfunction of the appliance can also lead to a shortening of the useful life of the unit.
- **Safety issues for hydrocarbon refrigerant units:** There is a current and powerful movement to replace hydrofluorocarbon refrigerants, which are bad for the environment, with "natural" refrigerants that are more benign. One class of such refrigerants is hydrocarbons, such as propane (R-290). This type of refrigerant is highly flammable and can be problematic in indoor locations unless certain safety measures are followed. One refrigeration safety expert has counseled that R-290 refrigerant units need to have their condenser coils in a clean condition along with constantly running fans in the condenser coil area to promote good ventilation.

So How Are the Condenser Coils to be Cleaned?

Mere surface brushing and vacuuming of the condenser coil structure will remove the surface matting of dust and debris, but they don't get at the clogging occurring within the interior of that structure and are not recommended.

Specialized coil-cleaning brushes are available that allow for extraction and removal by vacuuming of the deeply embedded dust and debris. Use of these implements greatly increases the time needed to get the cleaning job done.

For decades, knowledgeable technicians have resorted to the use of compressed air to very quickly blow out clogged condenser coils, especially the deeply embedded material. However, doing this in indoor locations requires effective capture of the blown-off debris to insure that no collateral contamination is caused.

What Effective Capture Means Are Available?

Until recently, the technicians using compressed-air coil cleaning have resorted to the use of damp fabric or large garbage bag to try to catch the debris blown out of the coils. These primitive items both have serious deficiencies.

The damp fabric, which is applied to the side of the coil unit opposite the input of the compressed air, in many cases, might not stay in place during the cleaning, causing undesired collateral pollution and requiring further cleanup. If it did remain in place, the technician had to contend with a thoroughly polluted, damp article requiring cleanup or disposal. The cleaning of a

large number of units in a preventative maintenance scenario is not well served with the use of damp fabric.

The use of a large garbage bag to attempt to catch the blown-off debris commonly would require two technicians, one to hold the bag and the other to do the blowing. This method also can allow some of the blown-off debris to miss the open end of the bag being held. Although a single operator can use this method, the bag needed to be taped or affixed to the coil structure, which undesirably slows down the cleaning operation.

More recently, there has been some movement toward better dust-containment methods. One representative product of this type, described at www.coilpod.com and also shown in the photo, is an engineered dust-containment product that can rapidly be fitted over compatibly sized coils in need of cleaning. The drawstring at the open mouth of the hood can be tightened once the bag is in place, forming a substantially sealed structure. The ports in the bag allow for the entry of sources of compressed air and vacuum, respectively, to get the job done both deeply and quickly. The bag's function is to merely trap the blown-off debris during the cleaning operation—not to collect it. Once the first unit is cleaned, the technician can remove the bag to use it on succeeding units. This is clearly a product to employ during a preventative maintenance visit



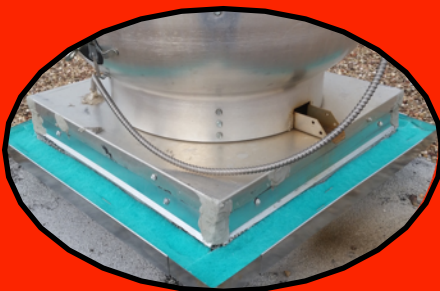
by a technician during which a large number of coolers need effective cleaning in the shortest time possible.

Richard Fennelly is director of product development at CoilPod, LLC, a developer of refrigeration coil-cleaning technology for compressed-air cleaning on refrigeration and freezer condenser coils. For more information, please contact Richard Fennelly at CoilPod, LLC: richard@coilpod.com, Twitter: @COILPOD, phone: 1.914.819.8937.



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Grease Extraction Efficiency Explained

By Randy Conforti, Precision Kleen, Inc., and Heat Transfer Specialists



Testing of Grease Extraction Devices

- Test Standard ASTM F2519-2005: Standard test method for grease particle capture efficiency of commercial kitchen filters and extractors
- ASTM F2519-2005 testing grease particle sizes from 0.3 to 100 microns
- UL 1046: Standard test method to prevent flames from penetrating into the exhaust system beyond the hood collar

Grease-Laden Vapor (Measured in Microns)

Three Different Categories:

- **Submicron particles:** 0.03–0.55 micron. A drop of grease or water that comes in contact with a hot surface and immediately burns off = smoke
- **Steam:** 0.55–6.2 microns. Grease-covered moisture and air mixture, cold or frozen food coming in contact with a hot surface
- **Spatter:** 6.2–150 microns. Larger, more visible particles produced during the cooking process

Grease Extractor

- A device or a system of components arranged for the reduction of grease concentration from the airstream entering the exhaust system

Grease Filter

- A device that is installed in the exhaust hood to remove grease from the airstream entering the device

Primary Filtration

- Removes larger particles: 5–10 microns

Secondary Filtration

- Removes smaller particles 2.5–3.0 microns

Purpose of Grease Extractor/Filter

- To prevent fire from entering the plenum and exiting the hood collar
- To collect and drain the grease
- To not allow the grease to fall back onto the cooking surface

Filters Designed for Cooking Applications

- Light-duty grease: steamer, ranges, pizza ovens, food warmers, etc.

- Medium-duty grease: fryers, grills, broilers, etc.
- Heavy-duty grease: char-grills, woks, broilers
- Extra heavy-duty grease: solid fuel, multiple char-grills

Common Types of Mechanical Filtration

Baffle filter: recommended for light-duty grease production:

- Works on inertial force, turning grease through the filter
- Most commonly used *but* least efficient and effective on grease extraction
- Removes larger grease particles, 7–10 microns
- Provides poor performance with efficiency; smaller micron droplets end up deposited throughout the entire exhaust system

Centrifugal filters: recommended for medium- to heavy-duty grease production:

- Spins the air as it passes through the filter, using centrifugal force, pushing grease out of the airstream
- Provides mid-range efficiency
- Provides improved grease containment within the exhaust hood

Multistage filters: recommended for heavy-duty grease production:

- Uses both primary and secondary filters
- Most effective on grease extraction

High-velocity cartridge: recommended for medium- to heavy-duty grease production:

- Utilizes centrifugal principles
- Provides mid-range efficiency

Grease Extraction Efficiency Explained

Standard baffle filter:

- Performs poorly in removing grease particulate at 5–7 microns and improves slightly up to 10 microns
- At 5 microns, filtration is 10% efficient
- At 10 microns, filtration is 40% efficient

High-efficiency filter:

- Performs well in removing grease particulate at 5 microns
- At 5 microns, filtration is 80% efficient
- At 10 microns, filtration is 90%–95% efficient

Multistage filter:

- Best performance in removing grease at 5 microns
- At 5 microns, filtration is 85% efficient

- At 10 microns, filtration is up to 99.5% efficient

Cartridge filter:

- Very effective on grease removal at 5 microns
- At 5 microns, 85% efficient
- At 10 microns, 90% efficient

Water wash with ultraviolet lighting:

- Best option for grease removal
- Water wash removes grease particulate at the 3- to 5-micron range
- UV light will remove grease particles below 3 microns; most efficient at 1 micron and below
- 99.9% efficiency in grease extraction

For comparison purposes, wool filter (nonmechanical):

- Performs well on grease extraction at 3–5 microns, 65%–80% efficient
- At 5 microns, 80% efficient
- At 7–9 microns, 98% efficient
- At 10 microns, efficiency will drop off; the filter media is now loaded
- Note: Due to efficiency at lower microns, filter media will load very quickly

Wool filter:

- Although it may be an option, it's not suitable for heavy-load cooking operations
- Three important reasons:
 - Cannot be washed and reused
 - Good performance in grease capture, load up quickly
 - Disposable after a single-use period

Note: A good-performing filter should provide the following:

- Efficiency
- Pressure drop
- Capacity

Maintenance of the Cooking Operation

All exhaust systems and equipment require maintenance. It is part of the entire operation. Regularly scheduled service is required on the space comfort systems, refrigeration systems, dishwashing systems, beer and liquor distribution, groundskeeping, housekeeping, etc. The exhaust system is often the first component that is neglected, avoided, and always misunderstood.

Grease extraction or filtration is as important as any other component. It is a simple procedure that must be included in any daily program.

Regardless of whether the cooking operation utilizes water wash with UV, high-efficiency extraction, or standard baffle filters, every OEM recommends having the system or filters washed daily at the end of the cooking operation to remove the accumulated grease produced that day.

Every cooking operation should have a daily maintenance program that includes the following:

- Hood extractors/filters
- Cooking surface and equipment
- Work area

Summary

Proper grease extraction from kitchen exhaust is vital. Despite evolving methods, proper efficiency is an ongoing problem. If we continue to cut costs, services, and maintenance programs and the implementation of inadequate equipment, the consequences will continue to be costly. We will never get closer to the end goal of a cleaner, safer, and healthier cooking and work environment.

The reason to explain grease extraction or filtration is due to several needs. The three common concerns or conversations are the following:

- Smoke capture, containment, and rollout issues or fan performance
- What are proper filters; why are the current filters not working?
- How do we properly clean; how do we start and implement a program?

Regardless of the operation, most decisions are made based on the lowest price, or they just had a menu change. If the decision was price, the purchase most likely can't meet the need. If it was based on menu change, the exhaust system may not be designed to compensate for the increased type of cooking and/or load. Once that decision is implemented, the next conversation concerns why it isn't working. Either the system or components were not sufficient for the task, cooking load, etc. The cooking operation does not have any plan or the proper maintenance program in place or the understanding of the equipment they are using. As service providers, we must understand the equipment's function and the proper application so that we can best advise our customers and solve their problems.

Randy Conforti has been involved with commercial kitchen environments for more than 20 years, providing full service in all areas of the restaurant operations. Since joining IKECA in spring of 2012, he is currently on the board of directors, ANSI consensus body, and certification committee and is chair of the education committee. He has created a strong presence within the AHJ community with continuing education and with the state fire marshal's office for code revision.

Final Rule to Improve Tracking of Workplace Injuries and Illnesses

Each year, millions of workers suffer serious injuries and illnesses on the job. Under the Federal Occupational Safety and Health Act, employers must provide their workers with worksites free of recognized serious hazards. To help prevent work-related injuries and illnesses, the Occupational Safety and Health Administration (OSHA) has for decades required employers to keep track of their workers' injuries and illnesses by recording them in what is often called an "OSHA log."

Under a final rule that became effective January 1, 2017, OSHA will revise its requirements for recording and submitting records of workplace injuries and illnesses to require that some of this recorded information be submitted to OSHA electronically for posting to the OSHA website.

We are taking information that employers are already required to collect and using these data to help keep workers safer and make employers, the public, and the government better informed about workplace hazards. Releasing the data in standard open formats will do the following:

- Encourage employers to increase their efforts to prevent worker injuries and illnesses, and compelled by their competitive spirit, to race to the top in terms of worker safety.
- Enable researchers to examine these data in innovative ways that may help employers make their workplaces safer and healthier and may also help to identify new workplace safety hazards before they become widespread.

In addition, the final rule includes provisions that encourage workers to report work-related injuries or illnesses to their employers and prohibit employers from retaliating against workers for making those reports.

OSHA expects this new rule will help improve workplace safety through expanded access to timely, establishment-specific injury and illness information for OSHA, employers, employees, employee representatives, potential employees, customers, potential customers, and public health researchers.

The rule will also provide OSHA with data to assist the agency in improving allocation of compliance assistance—to help OSHA provide to employers who want to improve their safety standards—and enforcement resources, expanding the agency's ability to identify, target, and remove safety and health hazards, thereby preventing workplace injuries, illnesses, and deaths. It will also enable OSHA to conduct more rigorous evaluations of the impact of government injury-prevention activities.

In addition, behavioral science suggests that public disclosure of the data will "nudge" employers to reduce work-related injuries and illnesses in order to demonstrate to investors,

job seekers, customers, and the broader public that their workplaces provide safe and healthy work environments for their employees. Currently, employers cannot compare their injury experience with other businesses in their industry; they can only compare their experience with their industry as a whole. Access to establishment-specific data will enable employers to benchmark their safety and health performance against industry leaders, encouraging them to improve their safety programs.

Finally, public access to very large sets of workplace injury and illness data will provide public health researchers with unprecedented opportunities to advance the fields of injury and illness causation and prevention research.

Background

In 2013, OSHA issued a proposed rule to improve tracking of workplace injuries and illnesses through the electronic collection of establishment-specific injury and illness data to which OSHA currently does not have direct access. The agency held a public meeting in January 2014 and received comments on the proposal. After considering public comments, OSHA is now issuing a final rule that requires certain employers to electronically submit injury and illness data.

Electronic Submission Requirements

The final rule requires certain employers to electronically submit the injury and illness information they are already required to keep under existing OSHA regulations.

The requirement applies to the following:

- Establishments with 250 or more employees that are currently required to keep OSHA injury and illness records must electronically submit information from OSHA Forms 300 – Log of Work-Related Injuries and Illnesses, 300A – Summary of Work-Related Injuries and Illnesses, and 301 – Injury and Illness Incident Report.
- Establishments with 20–249 employees that are classified in certain industries with historically high rates of occupational injuries and illnesses must electronically submit information from OSHA Form 300A.

The electronic submission requirements do not change an employer's obligation to complete and retain injury and illness records.

Data submission from OSHA Forms 300 – Log of Work-Related Injuries and Illnesses, 300A – Summary of Work-Related Injuries and Illnesses, and 301 – Injury and Illness Incident Report for these establishments will be phased in as follows:

Submission year	Establishments with 250 or more employees	Establishments with 20–249 employees	Submission deadline
2017	Form 300A	Form 300A	July 1, 2017
2018	Forms 300A, 300, 301	Form 300A	July 1, 2018

Beginning in 2019, the submission deadline will be changed from July 1 to March 2. Timeliness of the data collected is important for surveillance and intervention activities. The earlier a workplace hazard can be identified, the earlier it can be removed, reducing the chances of another worker being injured or becoming ill.

OSHA will post the establishment-specific injury and illness data it collects under this record-keeping rule on its public website (www.osha.gov). OSHA will remove any personally identifiable information (PII) before the data are released to the public.

The final rule retains the provision that allows OSHA to collect information from employers that do not submit the information to the agency on a routine basis. These employers would only be required to submit the data requested upon written notification from OSHA or OSHA's designee.

States that operate their own job safety and health programs, also called the OSHA State Plan states, must adopt requirements that are substantially identical to the requirements in this rule within six months after publication of the final rule.

Employees' Right to Report Free from Retaliation

These data will only be accurate if employees feel free to report injuries and illnesses without fear of retaliation. The rule therefore also contains three provisions to promote complete and accurate reporting of work-related injuries and illnesses.

- Employers must inform employees of their right to report work-related injuries and illnesses free from retaliation. This obligation may be met by posting the "OSHA Job Safety and Health—It's The Law" worker rights poster from April 2015 or later (www.osha.gov/Publications/poster.html).
- An employer's procedure for reporting work-related injuries and illnesses must be reasonable and must not deter or discourage employees from reporting.
- An employer may not retaliate against employees for reporting work-related injuries or illnesses.

Workers' Rights

Workers have the right to the following:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For more information, see OSHA's Workers page.

How to Contact OSHA

For questions or to get information or advice; to report an emergency, fatality, inpatient hospitalization, amputation, or loss of an eye; or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov, or call OSHA at 1.800.321.OSHA (6742), TTY 1.877.889.5627.

**For assistance, contact us.
We can help. It's confidential.**

Occupational Safety and Health Administration, U.S. Department of Labor, www.osha.gov, 800.321.OSHA (6742). This is one in a series of informational fact sheets highlighting OSHA programs, policies, or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is 202.693.1999; teletypewriter (TTY) number: 877.889.5627.

Cleaning High-Rise Kitchen Exhaust Verticals

Cleaning high-rise grease ducts brings about a completely different set of issues in comparison with low-rise verticals. In a perfect world, we see the ads about pressure-washing verticals, and they all seem fine—even for high-rises—until you realize that the devil is in the details. How do you get your equipment on the roof of a 25-story building with only a roof hatch, and what resources do you have when you get up there? What is the weight of 25 stories of pressure-washer hose that you will have to handle? How do you verify that the entire riser is clean below 50 microns? If you are using a 4-gpm pressure washer, how will you manage all that wastewater? Do I get a permit to bring my fuel-fired pressure washer on the roof? These are just a few of the questions one faces when preparing to clean high-rise kitchen exhaust ducts.

In reality, the questions start before you even consider quoting the work. Knowing the age of the system is essential. Older systems will likely be black iron or even galvanized steel with non-leak-tight seams. These older systems may have excessive baked-on grease that will require more time to soften with a pressure washer or may be largely impervious to a pressure washer and need to be manually cleaned. These older systems may have other ductwork interconnected, which could cause wash water to go in unintended directions.

The odds of getting accurate as-built drawings are not strong, so doing a thorough site assessment is important. For assessing verticals, there are remote cameras—such as those used in the plumbing industry—that come in lengths in excess of 200 feet and would give you the ability to document the condition of the duct and any previously unknown branch ducts in the system. These imaging systems are usually mounted on reels, are watertight, and have an integrated light source. Remote cameras are unlikely to show pinholes or other small leaks in the system.

How large is this ductwork? Pressure washers can do a fine job on smaller ductwork, but many older systems can be 4' x 4' or larger, drastically limiting the effectiveness of pressure washers, particularly if there is old baked-on grease. In larger ductwork where pressure washers may be ineffective, it may be necessary to install clean-outs at each floor or lower people down the riser.

Lowering people down the riser is not uncommon, but it adds levels of complexity, cost, and safety to the project. Lowering someone down the shaft is the only way in some cases, but in all cases, it is the last resort. Most municipalities require someone with a rigger's license to set up the system to lower a person down the shaft. These systems are typically a motorized bosun's chair—referred to as a man lift—with a drive motor mounted under the seat itself. You need to have a safety line, lighting, communication, etc.—all organized before you enter the shaft. The cost of rigging the system to lower someone down the shaft usually exceeds the cost of the cleaning itself,

and regardless of municipal requirements, this rigging is often best left to a third party rigging firm that already has all the equipment, licenses, and training.

The logistics of cleaning shafts for high-rises are unique. In low-rise verticals, you can leave your pressure-washing equipment on the ground and run your hoses up the exterior of the building, which allows you to use hot-water pressure washers. In a high-rise, you cannot run your water hoses up the side of the building, nor can you bring your fuel-fired pressure washers up to the roof without the proper permits from the AHJ. In some cases, it is easier for the client to provide a hot-water source at the roof, and although not as hot as you may be used to, it will be more effective than cold water and easier to set up than getting permits to bring a large, fuel-powered pressure washer up a ladder hatch from the penthouse. In smaller ductwork, dialing back your flow rates may result in taking more time but may reduce the overall wastewater generated. We have used pressure-washing spinning heads at flow rates less than 2 gpm.

If you are lucky, you have a newer listed grease duct system fabricated out of stainless steel with all the proper clean-outs. If you aren't quite that fortunate, you have the same duct system with no factory-installed clean-outs, which means that if you install clean-outs you void the listing for the system. They never make it easy, but know what listed systems you are working with and how you can resolve the access issues.

The same remote cameras you use to assess the systems can be used to verify the cleanliness. These cameras are waterproof, allowing you to lower them down during the cleaning process or separately. These systems rarely have the amount of light needed in a duct—in particular, a duct constructed of black iron—so additional light will likely be necessary.

Cleaning high-rise verticals is a must in our industry but seldom talked about by us in the trade and rarely talked about by the equipment manufacturers. It can be done safely and effectively, but doing your homework and being prepared is key.



AHJ Inspector Top 10 List

The Basic Information All Fire, Life Safety, and Code Officials Should Reference

#10. Fire Protection

- Are suppression system tags current?
- Are class K fire extinguishers present?
- Are all pull stations and control heads clear of obstructions?
- Is staff properly trained on system function and proper use?
- Does the fire suppression system comply with current manufacturer's approvals and listings?
- Do all fuel sources shut down upon system activation?

#9. Specialty Equipment

- Is pollution control equipment properly serviced and maintained to OEM specifications?
- Are ultraviolet lights functioning properly?
- Are water wash hoods washed properly and functioning per OEM?
- Are control cabinets being serviced and maintained?
- Are recirculation systems being serviced and maintained per OEM?
- Are water drains free flowing?
- Is detergent present in water wash cabinets?

#8. Exhaust Fans

- Are fans installed properly for safe access, inspection, and service?
- Does the installation include hinge kits, proper electrical service, and grease containment?
- Are the fans being maintained and serviced properly?
- Does the fan offer access to inspect the blower wheel?
- Is the grease containment being maintained and properly serviced?
- Is the electrical service at the fan properly maintained?
- Are there any electrical/shock hazards?

#7. Ductwork

- Are proper access panels installed, and are they obstructed by mechanicals?
- Is the entire ductwork system accessible and serviceable?
- Are the access panels installed in proper locations?
- Are there any leaks in the system?
- Are access panels installed at every change in direction?
- Is the discharge side of the fan serviceable?
- Is the installed system safe to inspect and service?

#6. Hoods

- Are hoods being operated without filters?
- Are the proper filters installed for the system?
- Are the filters installed correctly, and are they in the proper service condition?
- Are the hoods being cleaned properly behind the filters and in the plenum?
- Are hoods providing proper overhang for the appliances?
- Are the hoods of Type II construction being used in a Type I application?
- Are the lighting, grease cups, and operating controls being maintained?

#5. Cooking Equipment

- Are the cooking appliances kept free of grease accumulation?
- Is there excessive grease accumulation under, behind, and around the appliances?
- Are the control switches, gas valves, gas lines, and electrical service properly functioning?
- Are inspections performed at least annually?
- Is there grease from the hood and grease cups draining into appliance flues?
- Is the cooking staff properly trained to operate the appliances safely?

#4. New Construction – Preoccupancy Inspections

- Has a plan review been performed?
- Have site visits been performed during the build-out phase?
- Are there shop drawing vs. field installation conflicts?
- Are there any parts of the system that are noncompliant?
- Does the system meet current code?
- Renovation projects – what is the condition of the existing equipment?

#3. Cooking Operation

- What type of operation is the facility?
- What type of fuel is the facility using?
- What is the recommended inspection cycle?
- What type of food is being cooked?
- Is the operation a high-volume steakhouse that is being inspected like a nursing home?
- Is the cooking environment safe for operation?

#2. Proper Documentation

- Are service reports being provided, and are current and previous reports available?
- Are follow-up reports provided?
- Are deficiency reports provided?
- Is a proper certificate of performance on the hood or on the premises?
- Are proper pictures provided of the entire system?
- Is all documentation current and detailed?
- Are service tags on or near duct access panels?
- Can documentation verify the entire system is safe to operate, or do fire hazards exist?

And...

#1. The Service Provider

- Are the company and the technicians properly trained, qualified, and certified?
- Does the company have proper business insurance and licenses?
- Are they environmentally concerned and/or proactive?
- Is the service provider conducting itself professionally, ethically, and ensuring a safe environment for all involved?

*Presented by IKECA as questions to consider upon inspection of a commercial kitchen.
AHJs should always refer to the approved code that guides their jurisdiction.*

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CECS = 20 hours (2.0 CEUs) every 12 months

CESI = 40 hours (4.0 CEUs) every 24 months

Proof of Appropriate number of CEUs completed must accompany your IKECA Certification Renewal. *Payment of the renewal fee alone is not sufficient to renew your application.*

• Attendance at the IKECA Annual Meeting or Fall Technical Seminar <i>Up to 20 hours of content available per meeting</i>	Up to 2.0 CEUs	• Attendance at in-house training seminar, or one at another facility ** <i>0.1 CEUs per one hour of content</i>	0.1 CEUs/Hour
• Presenting at the IKECA Annual Meeting, Fall Technical Seminar OR other industry-related events <i>Approximately 5 hours of content development and presentation</i>	0.5 CEUs	• Online educational training programs <i>0.1 CEUs per one hour of content</i>	0.1 CEUs/Hour
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• Attendance at an industry-related conference, meeting or seminar * <i>Eligible for a maximum of 1.0 CEUs per meeting</i>	Up to 1.0 CEUs	• Technical Code Committee Work (NFPA, SHRAE, ANSI Consensus Body)	1.0 CEUs/Day
• Presenting to local AHJs within your jurisdiction <i>Must submit official documentation signed by an AHJ on their letterhead indicating date, location and time of presentation</i>	0.5 CEUs	• Active Participation in an IKECA Committee <i>0.1 CEU per committee meeting</i>	0.1 CEUs/Meeting
		• College courses - general and business management courses by accredited universities <i>Only 25% of CEUs per renewal cycle may come from college courses</i>	0.1 CEUs/Hour

PLEASE NOTE: If you rely on attending IKECA meetings or conferences to obtain the required CEUs, attendance is tracked, and certificates of attendance issued based on actual attendance.

*Acceptable organizations include: NADCA, ASHRAE, NAFA, NFPA, NAFED, RFMA, NASFM. For all others, please contact IKECA to confirm eligibility.

**Must be taught by 3rd party instructor or certified to train the subject matter. (Qualifying topics include but are not limited to: ladder safety, PPE, fall protection, hood/system service, near miss reporting, defensive driving, etc.) Before pursuing a course, contact IKECA to ensure the course qualifies.

L E A R N | L E A D | S U C C E E D

New Certifications

Congratulations to those who recently achieved their designations and certifications!

CECS

Certified Exhaust Cleaning Specialist

- **Mohamad Youssef Baydoun**
ALShaheen Specialized Services
- **Jim McCrary**
Blue Green Hood Cleaning, Inc
- **Richard Caron**
Cadexair, Inc.
- **Sarah Marie Houck**
Capital Kleen-Air
- **Oscar Rodriguez**
Coast Environmental
- **Graham Cochrane**
Cochrane Ventilation Inc.
- **Juan Marcos Perez**
Enviro Tech Products & Services
- **Amanda Clark**
Fire Protection Equipment Company
- **Robert Johnson**
FirePro, Inc.
- **Les Steubing**
Guardian Power Cleaning of Dallas, Inc.
- **Bala Kumar**
Hood Cleaners of America
- **Jonathan Jauregui**
Medical Air Care, Inc.
- **Roberto Ramirez**
Medical Air Care, Inc.
- **Reynaldo Serda**
Protection 1
- **Khaled Muthana**
Air Flo Cleaning Systems
- **Mathew Hillstead**
Assinboine Fire Protection Inc.
- **Kia Shirbacheh**
KBTA Inc (dba SRK mid Atlantic)

CESI

Certified Exhaust System Inspector

- **Jim McCrary**
Blue Green Hood Cleaning, Inc
- **Griffin Hamilton**
Grease Bandit

CECT

Certified Exhaust Cleaning Technician

- **William Menize**
A-1 Airvents Northern States, LLC
- **Antonio McNair**
Enviromatic Corporation of America
- **Joshua Palmer**
HVAC Inc.
- **Alan Peng**
Peng Ventilation Hood Cleaning
- **Antonio Cabrera**
Pronto Mechanical Services

BCCS

Boston Certified Cleaning Specialist

- **Demesvar Jones**
Advantage Hood Cleaning
- **Thomas Dunlevy**
Advantage Hood Cleaning
- **Fred Sorrento**
Advantage Hood Cleaning
- **Steven Griffin**
Advantage Hood Cleaning
- **James A. Niemi**
Air Duct Services div of BMCA, Inc.
- **Keith Manley**
Air Duct Services div of BMCA, Inc.
- **Phil Landy**
Air Duct Services div of BMCA, Inc.
- **Oscar Morales**
Boston Hood Cleaning
- **Rondald Cote**
Ceiling Pro International of Rhode Island, Inc.
- **Marc Parsons**
Kitchen Klean Inc.

BCSI

Boston Certified System Inspector

- **Mark Eckert**
Enviromatic

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New Members

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Joe Dahlheimer, DuraVent, Medina, OH
Johan Brandt, Lifa Air, Ltd., Helsinki, AK, Finland
Kevin Jordan, Schermerhorn Bros. Co., Lombard, IL
Sebastien Khandjian, MEET Environmental Solutions LLC, Dubai, United Arab Emirates

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Erwin Rommel Beltran Ramos, Isotech Specialty Services, Inc., Calamba City, Philippines
Ferdinand Michael Mercado, Leogem Chimney/Ducts Cleaner Services Inc., Cebu City, Philippines
Froilan Soledad Fernando, Allan Industrial Products And Services, Paranaque City, Philippines
Joan V. Guinto, Advanced Cleaning & Restoration Technologies, Inc. DBA Steamatic Philippines, Makati City, Philippines
Manoj Ranil De Silva, Bon Engineering Pvt Ltd, Male, Maldives
Mohamad Baydoun, CECS, AlShaheen Specialized Services, Abu Dhabi, United Arab Emirates
Vivian Garcia, Tegimenta Chemical Phils Inc., Quezon City, Philippines

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Andy Bugna Azucena, Ayala Property Mgt Corp, Makati, Philippines
Ashley Hodge, Panda Restaurant Group, Rosemead, CA
Austin Halley, Meridian Hospitality, Meridian, MS
Chelsea Prior, Big Burrito Restaurant Group, Pittsburgh, PA
Scott Corniea, Mall of America, Bloomington, MN
William Gardiner, MarketPlace PHL LLC, Philadelphia, PA

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Al Shjarback, Warren Township Fire Prevention, Warren, NJ
Alan Gee, Haldimand Emergency Services, Cayuga, ON, Canada
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Andrew Herendeen, Manchester-by-the-Sea Fire Department, Manchester, MA
Anthony Wilbur Carter, Coastal Carolina University, Conway, SC
Bill Myers, City of Kent Fire Department, Stow, OH
Billy Bishop, City of Gaffney Fire Department, Gaffney, SC
Bob Ploeg, Thunder Bay Fire Rescue, Thunder Bay, ON, Canada
Brandon Shaw, St. John's Fire District, Johns Island, SC
Brandon Simmons, North Charleston Fire Department, North Charleston, SC
Brian Charles Rexhouse Sr., Town of Wappinger, Wappinger Falls, NY
Brianna Baker, Whitechurch Stouffville Fire, Stouffville, ON, Canada
Chad A. Kelly, Town of Moncks Corner, Moncks Corner, SC
Chad Allen Graham, North Charleston Fire Department, North Charleston, SC
Chad Kelly, St. John's Fire District, Johns Island, SC
Chantelle Cosgrove, Brampton Fire Department, Brampton, ON, Canada

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Chris Wells, Municipality of Brockton, Walkerton, ON, Canada
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Dale A. Johnston, Town of Mount Pleasant Fire Dept., Mount Pleasant, SC
Dan Failla, City of Charleston Fire Department, Charleston, SC
Danielle Tison, Hilton Head Island Fire Rescue, Hilton Head Island, SC
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David J. McDonough, College of Charleston Fire & EMS, Charleston, SC
David Kearney, Philadelphia Fire Department, Philadelphia, PA
David Marra, Richmond Hill Fire & Emergency Services, Richmond Hill, ON, Canada
Debbie Brown, City of Charleston Fire Department, Charleston, SC
Deborah Grant, Barrie Fire Emergency Service, Barrie, ON, Canada
Denise Hostetler, Suffield Fire Department, Hartville, OH
Dianne Kyle, Severn Fire, Severn, ON, Canada
Duncan Rydall, Blue Mountains Fire Services Department, Thornbury, ON, Canada

New AHJ Members continued on next page

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 Keith Wells, Georgina Fire Department, Keswick, ON, Canada
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 Ken Maynard, Uxbridge Fire Department, Uxbridge, ON, Canada
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 Kevin Allan Berkel, St. Andrews PSD Fire Department, Goose Creek, SC
 Kevin Lee Powers, Richland County Fire Marshal's Office, Columbia, SC
 Kevin Vaughan, Town of Ajax, Ajax, ON, Canada
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Contribute to the conversation in the commercial kitchen exhaust cleaning industry – write an article for the next issue of the IKECA Journal. Articles should be on current subjects of interest to those in cleaning and inspection, including contractors, fire authorities, insurance providers, facility managers and owner/operators.

- * Your perspective on today's industry topics
- * Share your story with an innovation or new device or procedure
- * Your personal experience that offers lessons learned
- * Best practices on maintenance or repair
- * Frequently asked questions that you want to answer
- * Personnel or staffing tips that you've learned

Details

- View IKECA's full Article Submission Guidelines for all details.
- Email complete articles to information@ikeca.org
- Articles should be between 750 and 2,000 words (between 1 ½ to 4 typed pages)
- Charts, tables and photos are welcome, subject to editorial approval
- Include a short biography of the author (50 words)
- Articles must be educational and informative in nature, and must not be advertisements for specific good or services. All are subject to review, approval and editing before publication.

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Questions? Call IKECA at 215-320-3876 or email information@ikeca.org.

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