



You Are Now Entering the Breathing Zone: Salon Ventilation Guide

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Aerovex Systems, Inc. | AerovexSystems.com

The invisible beach ball-sized sphere of air that surrounds your face in all directions is a great place to start implementing efficient salon ventilation. NAILS walks you through all of the things you need to know, from what to look for in a ventilation system to how the components work to a few tweaks you can make in your day-to-day habits for extra protection. Get ready to breathe easy.



We know there's a lot to think about when managing a nail salon. From product ordering to fixing a leaky faucet to the crucial art of client booking, sometimes it seems that everything is urgent and that anything that doesn't require immediate attention is a low priority, no matter how important it may be in the long-run. So we know that it's easy to ignore the comments of a client or two who complain about the lingering odors in the salon or the dust that is covering your clothing by mid-afternoon. Maybe you even made an attempt at addressing these issues, such as buying a home or office air purifier from the local hardware store. But even with the air purifier, you notice the smell lingers and the dust remains.

It's difficult to make ventilation a priority, especially when you don't even smell the salon odors anymore and you feel perfectly healthy. Maybe you will remain perfectly healthy for the next 50 years (we certainly hope so!), but here's a message from your future self: It would have been so easy to prevent the headaches, the sore throats, the watery eyes, the constant sneezing, and the shortness of breath. All it would have taken would have been to contact Aerovex Systems, order some equipment and dealing with a one-time hassle of figuring out where to place it in the salon, then doing some simple maintenance every few months (the equivalent of changing a light bulb) to keep the system working. Isn't that worth a lifetime of breathing easy?

"The nail salon is a tough environment," says Jeff Cardarella, president of salon ventilation manufacturer Aerovex Systems. "The vapors and the dust are similar to a printing press room. It's strong industrial solvents you're working with, and they're stubborn to remove." (That's why a home or office air purifier won't work in a nail salon.) The vapors come from the products themselves, which you've probably noticed when twisting the top off of a new bottle of acetone or acrylic monomer, and the dust comes from filing off enhancements. Even if you can't see the dust, that doesn't mean it's not there. What you can't see can really hurt you: When it comes to some of the UV gel products, the dust is so fine that it's insidious. The UV gel dust just kind of floats up and gets into everything. It can lodge itself inside your lungs, causing a slew of respiratory and other ailments.

Legal Requirements

So if a salon is such an unpleasant work environment, why aren't there laws protecting nail techs requiring ventilation systems to be installed in every salon?

That's a complicated question without a great answer. Many different government agencies hold some claim to enforcing clean air requirements in nail salons. However, in many cases, the laws are outdated or simply unenforced. The Occupational Safety and Health Administration (OSHA) requires engineering controls when chemicals in the workplace exceed permissible exposure limits (PELs). However, in nail salons PELs are almost never exceeded. Unfortunately, that doesn't mean there aren't potential health effects at concentrations below OSHA PELs. Plus, OSHA doesn't have established PELs for some of the chemicals used in nail products.



The International Mechanical Code (IMC) also addresses ventilation and is the basis for most state-specific mechanical codes (generally enforced by local building departments), so in many places salons must comply with its requirements for construction permits and/or certificates of occupancy. Updated every three years, the IMC has addressed nail salon ventilation since 2006. But, as it was only mentioned in a footnote, many inspectors overlooked it.

The 2012 IMC raises the bar on salon ventilation, stating that nail stations in nail salons must now each be provided with a source-capture system capable of exhausting not less than 50 cubic-feet-per-minute. Of course, it remains to be seen which jurisdictions will enforce the code. Benjamin Bell, principal of the architectural division of CESO Inc., which handles the design of nail salon chain Regal Nails, says Regal Nails chooses to be proactive in complying with the IMC: "Because of the sheer number of salons we have designed in locations all over the country, we have been made aware of the code requirements by multiple jurisdictions. As we ran into the concern more frequently, we did some thorough research into the issues, including discussing them with the International Code Council (the group that issues the IMC), and devised a series of stepped responses that address the concerns." He adds that all jurisdictions that opt to enforce the 2012 code are likely to require the use of vented tables. "We have also begun to see some jurisdictions that require source capture at the pedicure spas as well," Bell says.

State cosmetology boards also hold some jurisdiction over salon air quality. However, many boards use vague undefined terms like "adequate" when describing the requirements for a ventilation system, which isn't really enforceable.

Finally, some agencies like public health departments and state boards focus more on the safety of salon clients, not of workers. But clients are only in the salon for about an hour. You're in the salon the entire day.

New Awareness

Though it's unlikely your salon will face any legal repercussions from insufficient ventilation, there are compelling health reasons to protect yourself and your staff. The vapors and dust of nail products are generated close to your breathing zone and can cause a variety of acute and long-term diseases. When ventilation isn't sufficient, airborne chemicals build up, increasing your exposure. And simply having the heating-ventilation-air-conditioning (HVAC) system running doesn't lessen your exposure. Chemical vapors are usually heavier than regular air, so they settle downward. That means that by the time the vapors get to the ceiling vent, they've already gone through your breathing zone.

Several local governments recently started offering incentives for salons to improve their air quality. In November 2010 (and effective from February 2012), San Francisco adopted legislation to create a Healthy Nail Salon Recognition Program by which its Department of the Environment recognizes salons that meet certain parameters including ones that "install mechanical ventilation unit(s) within one year of

entering recognition program” and that “allow SFE program staff to monitor air quality within the salon.” It will also give away ventilation systems to the first 10 businesses that agree to become “healthy” salons.

In King County (home to Seattle), Wash., the Local Hazardous Waste Management Program (LHWMP) instituted a voucher program that reimburses nail salons up to 50% of the purchase price (up to \$500 lifetime) for items that lower nail tech exposure to dust and vapors, such as nitrile gloves, N95 masks, and metal cans with tight-fitting lids. “It was determined from studying some incentive programs in the country that financial assistance provided businesses with the incentive they needed to change procedures,” says Laurie Foster, nail salon project coordinator for the LHWMP. Fifty-three nail salons have used the voucher program since 2008. (It is funded by residential and commercial solid waste and utility ratepayers and by residents and businesses that take their solid waste to a transfer station or landfill.) “People from all over the country have contacted me regarding the healthy nail salon program,” Foster says.



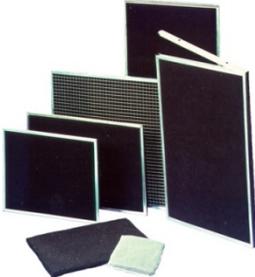
The biggest challenge to be overcome may be that many people, including many in the nail industry, think it's inevitable that a nail salon will smell, well, like a stereotypical nail salon. However, with the latest in ventilation technology, a nail salon can have the same smell as the outside air. “Today, we can do that,” Cardarella says. “There should be no discernible difference in the clean air outside the salon and inside the salon.” Indeed, on average, a nail salon exhaust system has the potential to reduce exposures by at

least 50%, according to an in-depth survey report released in September 2012 by the National Institute of Occupational Safety and Health (NIOSH).

Convinced yet? If so, we've done quite a bit of your research for you so you know exactly what to look for in a ventilation system and how to beat some common obstacles that keep nail techs from installing proper ventilation.

The Ideal Ventilation System

Setting aside for a moment money, space, and other concerns, what does the ideal nail salon ventilation set-up look like? It's a three-part system that takes into account the breathing zone, the entire room, and the entire building in which the salon is housed.

Area Ideal	Ventilation What It Does		Additional Considerations
<p>Breathing Zone</p>	<p>Source Capture Ventilation With single arm</p>  <p>Or dual arm</p> 		<p>If your salon primarily does:</p> <p>Acrylics: Vapors from acrylic monomer and acetone are your main concerns. Get a source-capture system with several inches of activated carbon.</p> <p>Gels: Dust from filing off gels is your main concern. A filter that removes particles down to the micron level is ideal.</p> <p>Natural nails: Vapors from acetone and polish are your main concern. The go-to is the same choice as for acrylic-dominant salons: a system with several inches of activated carbon.</p> <p>All of the above: Get one with several inches of activated carbon. Confirm with the manufacturer that it also has a dust filter in place.</p>
<p>Work Station/ Room Zone</p>	<p>'The One That Works' Salon Air Purifier</p> 	<p>Several inches of activated carbon adsorbs vapors, due in part to its many small, low volume pores.</p>	<p>- Because source capture is not 100% effective, a whole salon room air purifier is also necessary.</p> <p>- A salon air purifier is also a good choice for a product storage room</p>
<p>Building Zone</p>	<p>Dust Plus Filters</p> 	<ul style="list-style-type: none"> - Increased dust holding capacity compared to a residential HVAC filter. - Includes activated carbon panels to remove residual vapors (much less activated carbon than in the source-capture system because by this point, most of the vapors should already be trapped by the breathing zone and room capture systems). 	<p>The salon filter can generally be retrofitted into your existing HVAC system, replacing the existing filter.</p>

Inside a Source-Capture Ventilation System



A source-capture system at your station is your first line of protection.

But What About?



Masks: If you're going to use a mask, you need a NIOSH-approved N95-rated mask (available in the painting department of hardware stores). An N95 mask is a high-efficiency dust mask. Don't wear a surgical mask: the dust will go right through it and the vapors will saturate the mask, making your breathing zone more hazardous.

Windows: Open windows are an improvement over a closed salon environment; however, so much of the effectiveness of window ventilation depends on which way the wind is blowing (i.e. into or out of your face) that it's too unreliable. Plus, if that's all you have, then what will you do when it's cold or rainy outside?

Fans: If a window is open and a fan pointed out, it will help some. But if you have a door or window open elsewhere, it could create a river of air that completely bypasses your station. Relying on fans without an open window doesn't work. That will just blow the dust and vapors all over the salon.

Venting to the outside: If you can set up your system so it vents to the outside, that's great. Some municipalities even have this as a requirement in their building codes; however, it is usually expensive and/or difficult to do (such as if your salon is in the center of a mall), and many building inspectors will approve a source-capture system in lieu of venting to the outside.

Home or office air cleaners: Homes and offices don't generate the kind of dust and vapors that nail salons do, so these air cleaners won't be effective in salons. There aren't any ionizing air cleaners yet built for nail salons either, and there's a controversy over the ones built for other environments as to whether they can expose the user to harmful ozone levels.

A manicure table with a built-in grate: Connected to the right type of source-capture system with activated carbon and dust filters, this is a terrific way to protect yourself. Just be aware that if you have a built-in grate but it only came with a fan or no significant filter at all to capture what is getting sucked in, then it's not protecting you. Many nail salon ventilation companies can retrofit your existing table with a proper system. (Also, don't cover the grate with your manicure towel.)

Signs Your Salon Needs Better Ventilation

It's a misconception that using your vision or sense of smell is a tell-tale indicator. You can be inhaling particles and not see or smell them. Here are a few more reliable signs:

- Strong product odors linger for more than 10 minutes after use.
- When someone uses a strong-smelling product, people on the other side of the salon detect the odor.
- You smell product odors when you open the salon in the morning.
- Windows and doors are closed and there is no mechanical ventilation system in place or turned on.
- Your only ventilation system is the built-in HVAC system, which does not have nail salon-appropriate filters in it.
- The walls "sweat" with moisture or the windows fog.
- Workers frequently have one or more of the following symptoms: headaches, dry or sore throats, blurry vision, watery eyes, insomnia, irritability, nausea, dizziness, cough, a runny or bloody nose, sneezing, tingling toes or fingers, drowsiness, chest aches or pains, shortness of breath, loss of coordination or appetite.
- Your clients, neighbors, and/or landlord complain about -offensive odors.

Little Things You Can Do For Extra Protection

There is no replacement for a three-zone ventilation system but here are some great supplemental ideas.

- Frequently close containers (not just when you go home at night).
- Use only wastebaskets with tight-fitting lids.
- Replace all carpet with hard flooring. (Vacuuming will not remove dust and vapors. Shampooing will remove some.)
- Ensure all products are accurately labeled and that you have manufacturer-provided Safety Data Sheets (SDS) on hand for all products so you can refer to control measures and handling requirements.
- Choose a wood for your manicure table that will not soak up the chemicals. According to NIOSH, a veneer-coated particle board works well.
- Wash your hands, arms, and face with mild soap and water several times throughout the day to remove dust.
- Don't eat or drink in working areas. Certain salon chemicals can cause health problems if swallowed.
- Have an HVAC expert clean and evaluate your HVAC system at least once a year.



Obstacle #1

Financing

Solution: Getting a comprehensive system will likely cost you a few thousand dollars. Most ventilation companies offer no-interest payment plans, making the payments manageable. Salon owner and nail tech Iryna Giblett suggests raising your prices a small amount (telling your clients it's for your and their health) so that over time you can make the money back.

Obstacle #2

Noise

Solution: It doesn't sound like a hair dryer. It's closer to the sound of a fan. Nail techs we interviewed told us it's no problem to talk over a source-capture system. If you're in a serene spa where people talk in whispers, then you may find it annoying (and you'll need to make a decision for yourself whether atmosphere or air quality is more important).

Obstacle #3

Maintenance

Solution: To keep the system working, it's crucial you change out the activated carbon and the dust filters on the manufacturer recommended schedule. (Otherwise, they will simply stop working from being too full.) Aerovex Systems offers convenience plans by which they'll automatically mail you the needed filters and carbon on time. So when you get replacements in the mail, change them. And make sure you turn the system on every time; that's just a matter of creating the habit.

Obstacle #4

Explaining It to Clients

Solution: Whether they've mentioned it to you or not, your clients have probably noticed the odors and the dust. The nail techs we spoke to said their clients were as enthusiastic about the new ventilation system as the tech was. Steve Wallace, vice president, sales, marketing, and business development at Medicool (which makes the Mani-Vac by Medicool) says it's easy to explain to clients why you installed ventilation: "In light of the potential for both myself and my clients to have breathing issues caused by airborne dust particles as a result of filing acrylic and gel all day long, I have decided to protect us both by investing in a system to remove the harmful dust particles out of the air in this salon." And manufacturer Aerovex Systems even offers a window decal (shown) to market your salon as a "Three-Zone Protection Certified Salon."



Obstacle #5

Space

Solution: The floor footprint of most systems is smaller than an old vinyl record. Also, if your salon has two tables within a few feet of each other, ask about a dual arm system (shown).

