



Nederman

Aerosol Control Solutions

Providing Clean Air for Dental Offices Through At-Source Capture

Clean air is the cornerstone of **workplace safety**. With more than **75 years of experience** in workplace clean air – Nederman is the market leader in clean air technologies.



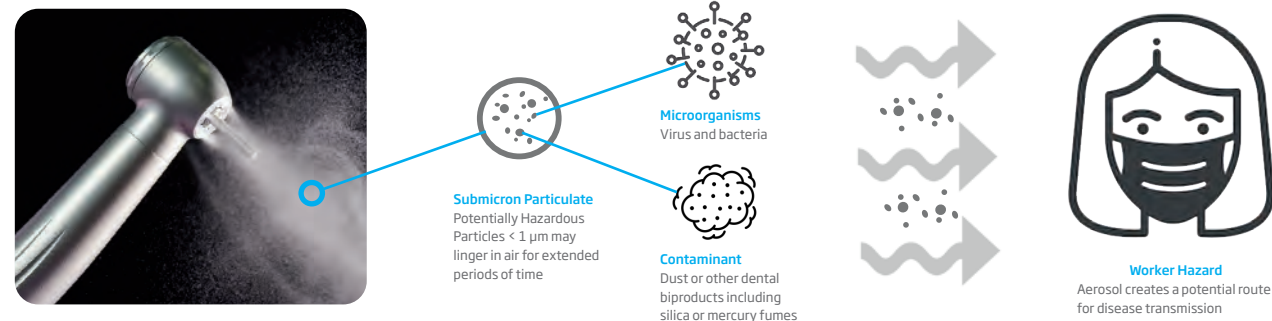
Control Aerosols at the Source

Source Capture Benefits

- Captures aerosol where it is generated
- Prevents migration throughout the room
- Isolates and protects workers from the potential hazard
- Energy efficient method

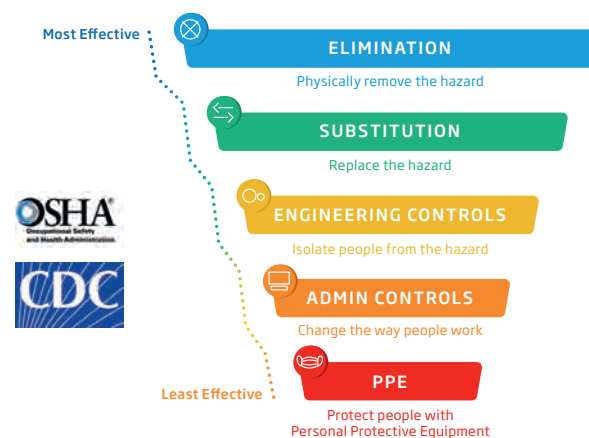
Aerosol generating procedures (AGPs) release airborne particles and droplets that can increase the risk of respiratory infections. Nederman's aerosol control solutions proactively help protect dentists, their patients and their employees from these airborne hazards.

Hazards of aerosol generating procedures



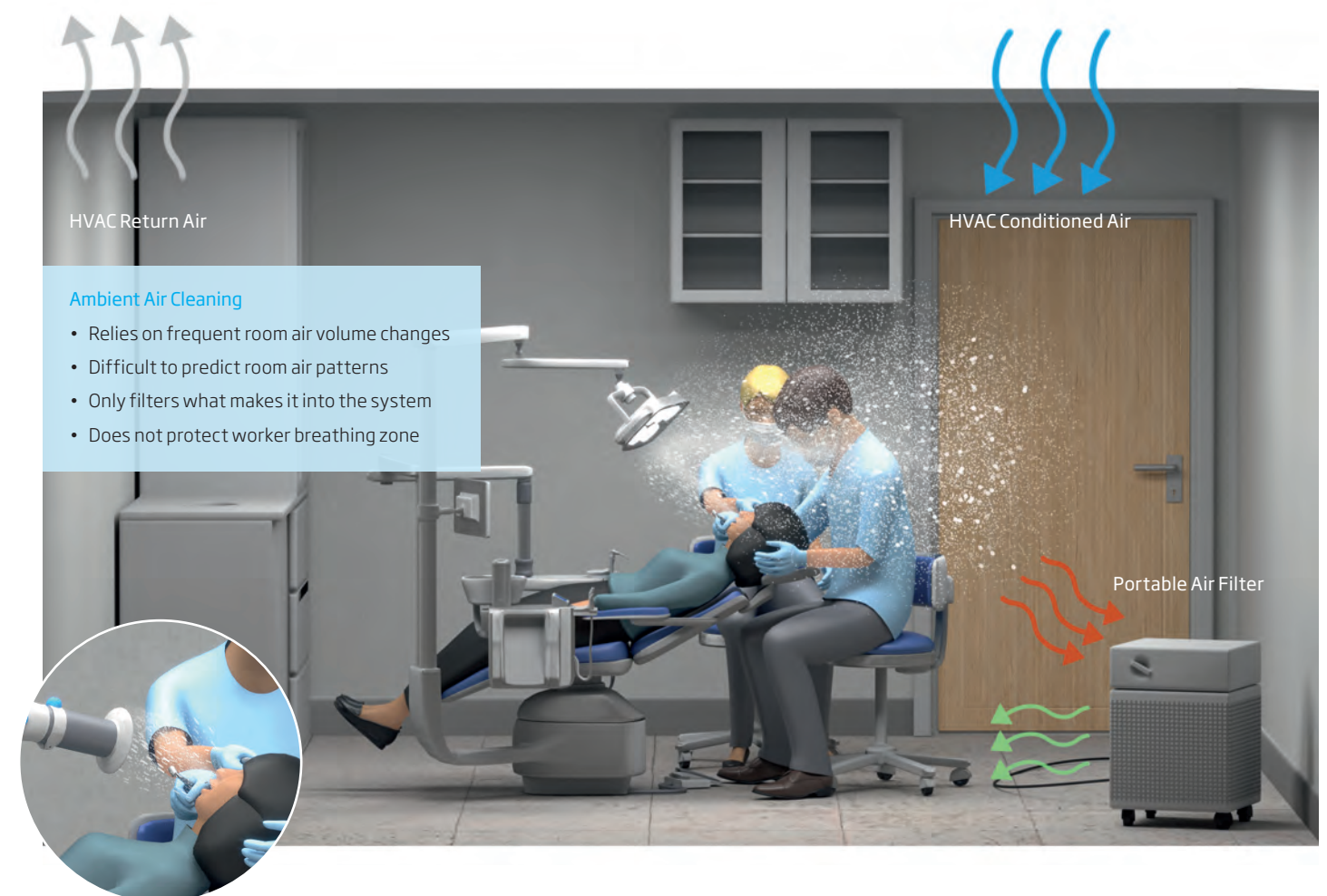
Controlling Aerosol Exposure

The CDC's National Institute of Occupational Safety and Health (NIOSH) recommends applying a hierarchy of controls to mitigate risk of airborne contaminants resulting from aerosol generating procedures (AGPs). While no single system can fully mitigate risk, the use of well-designed engineering controls, as a part of a multi-tiered safety strategy and independent working interactions, can significantly reduce worker exposure to hazardous aerosols. Nederman offers a highly effective, source capture aerosol control solution that aligns with relevant health and safety organization recommendations.



Source Capture - The Most Effective Engineering Control

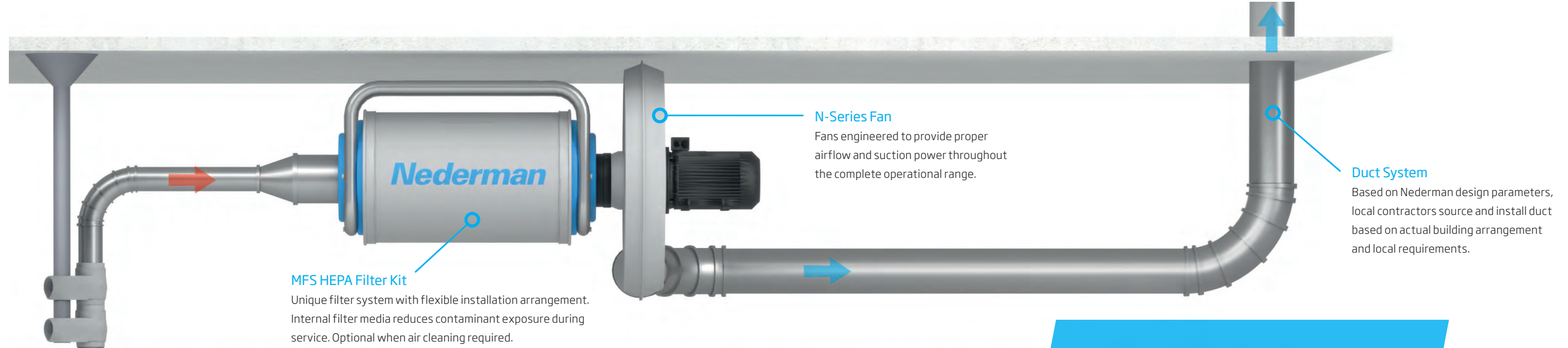
Common approaches to indoor air quality are based on ambient air cleaning with air-change schedules by the HVAC system or by adding auxiliary air cleaning equipment. While these techniques may be effective over time, this approach does not remove the immediate worker exposure to aerosols.



Source Capture

Nederman's source capture method is the most effective and energy efficient engineering control solution. An independent study found that the Nederman FX₂ extraction arm achieved 100% capture efficiency with adequate air volume and proper hood positioning.

"Engineering controls are favored over administrative and personal protective equipment (PPE) for controlling existing worker exposures in the workplace because they are designed to remove the hazard at the source, before it comes in contact with the worker." **Center for Disease Control**



N-Series Fan
Fans engineered to provide proper airflow and suction power throughout the complete operational range.

Duct System
Based on Nederman design parameters, local contractors source and install duct based on actual building arrangement and local requirements.

MFS HEPA Filter Kit
Unique filter system with flexible installation arrangement. Internal filter media reduces contaminant exposure during service. Optional when air cleaning required.

Nederman Solution Approach

1. Capture the aerosol at the source using a high air volume extraction (HVE) system with articulating extraction arm with well positioned hood.
2. Where possible, exhaust the captured aerosol safely from the building using a certified, High Efficiency Particulate Air (HEPA) filter when necessary.
3. Where exhaust is not possible, filter the aerosol with a medical grade HEPA filter and recirculate within the room.

Ceiling Mount Installation
Arm mounts to ceiling freeing up floor space and avoiding procedure obstructions.

Drop Ceiling

FX₂ Extraction Arm
Proven effective, easy to use, reliable and refined solution for aerosol capture.



Capture Hood Options
Transparent hoods available based on dentist preferences or requirements.

Planning Your Solution
Proper Hood Position - The ideal position for the hood is above the patients chest approximately 30 cm (12") from the patient's mouth at a slight angle pulling the aerosol away from the dental professionals.

Ceiling Mounting Location - Choose a location where the fully extended arm will be properly positioned but fully out of way when the arm is not in use.

Additional Equipment - Review the motion of other equipment such as lights or tool carts to avoid potential interference.

Installation - Work with a HVAC or mechanical contractor for the duct layout, local building adaptations and code compliance to ensure safe installation of the exhaust system. Duct materials should be smooth, round, sealed industrial-grade duct made from a non-corrosive material.



Proven Capture Performance

DID YOU KNOW?

The U.S. Department of Labor ranked dental professionals as the most unhealthy jobs in America, due to contaminants, disease and infections.

A Trusted Solution

Maximum aerosol capture

Reduce patient and staff exposure to potentially infectious particles with an effective, source capture extraction method.

Permanent refined solution

Designed and engineered to as a lasting solution to aerosol with a smooth, aesthetic and durable design that matches medical office environments.

Installation flexibility

One size does not fit all. Configurable solutions allow offices to exhaust aerosols, filter the air stream or recirculate and can be adapted for single or multiple chair arrangements reducing the average cost per chair.

Low noise

Noise levels less than 60 dB, equivalent to a normal conversation, at the rated airflow.

Save valuable floor space

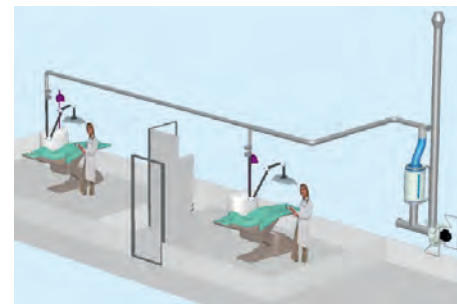
A secure, ceiling-mounted extraction arm maximizes valuable workspace and minimizes trip hazards.

Aesthetic design

A smooth and low-profile design to match medical office environments. Constructed of durable anodized aluminum.

Unique maneuverability

The FX₂ extraction arms are highly flexible and simple to position, extend and retract. The two outermost arm joints can rotate 360°. Position the hood exactly where required and lock in place without obstructing the dental procedure.



Choice in configuration

Individual or central systems available



Installation

Ceiling and wall mount options



Always in the right spot

Flexible and simple to position. Outer joints can rotate 360° to position exactly where you need it.

Creating a “Dental Clean Room” for Summerwood Family Dental

Summerwood Family Dental in Portland, Oregon, knew that PPE was not enough to keep their patients and staff safe during aerosol generating procedures.

They took a proactive, research-based approach to controlling aerosols when they reopened after the COVID-19 Stay at Home Orders.

Having more than 30 years experience of treating patients, Summerwood’s owner, Dr. Julie Spaniel was aware of the dangers of bodily fluids causing contamination in a dental office. In order to provide a safer, cleaner environment for everyone, she needed a way to evacuate the aerosols and remove them at the source.

“With COVID being aerosolized in the salivary fluids, I knew the velocity of these aerosols during a dental procedure was problematic. My dental drill runs at 500,000 - 700,000 revolutions per minute. When you have air and water forced through my hand piece at that rate of speed, I am not just creating salivary aerosol, I am creating a windstorm of bacteria and virus around the room”, said Dr. Spaniel.

A first of its kind in the U.S., she came up with the concept of isolation, ventilation and filtration – “Dental Clean Rooms™.”

Her husband Adam knew adding HEPA filtration to the building’s HVAC system would be a good countermeasure and would remove particles from ambient air, where they could already have come in contact with people. And, they needed a tool that removed aerosols from the source, or the area where the dentist and patient were, not the room as a whole.

Not only does Summerwood Dental hope their FX₂ extraction arm will help protect against COVID-19, they also want to use it to help prevent other contagious diseases like the flu. Even in past work years, Dr. Spaniel comes down with a cold or the flu six to seven times a year due to the nature of her work. The FX₂ extraction arm is helping them create a cleaner, more sanitary environment across the board.



Nederman

The Nederman Difference

Source capture

Capture infectious particles at the source

Floor space

Maximize valuable work space

Flexible

Engineered for most office buildings and configurations

Peace of mind

Proactive approach to prevent exposure

nederman.com

Various health and safety organizations have advised about the risks of disease transmission, including COVID-19, through aerosol generating procedures. The contents of this publication reflect Nederman's best efforts to interpret available guidance and provide recommendations regarding the use of Nederman products to mitigate the risk of disease transmission inherent with aerosol generating procedures. These recommendations do not, and are not intended to, constitute legal or medical advice. Our solution is intended to be part of an overall safety strategy, which is ultimately the responsibility of the end-user, as no one system can completely eliminate the risk of disease transmission. We encourage customers to consult appropriate counsel and advisors, and make an informed decision in choosing to use Nederman's solution to reduce aerosol concentration. Nederman is available to assist customers in better understanding how to properly install, operate, and maintain the Nederman solution in order to leverage its effectiveness for your business purposes.

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