Suitability of IQAir® Systems for Protection Against Airborne Biological Weapons

The worldwide increase of terrorist threats has exposed the vulnerability of our cities and buildings to attacks with biological weapons. This press release is in response to the questions we received from government agencies, hospitals and the public regarding the effectiveness of IQAir® advanced air cleaning systems against airborne biological weapons.

Although we agree with most experts that the statistical risk of exposure to airborne biological weapons is small, we nevertheless feel that it is our responsibility to discuss the possible contribution IQAir® high-efficiency air filtration systems can make to reduce the risk of exposure to biological weapons in indoor environments.

IQAir® systems are already being used worldwide for the purpose of providing airborne infection control in critical health-care environments, including for the protection against highly infectious diseases, such as SARS and TB. Due to IQAir's outstanding filtration efficiency for even the smallest microorganisms known to mankind and the various IQAir® ducting options to create positive and negative pressure areas, the systems are able to reduce the risk of indoor exposure to airborne biological contaminants.

While the actual effectiveness in protecting individuals will always depend on several factors which are beyond our control, we believe that IQAir® systems can make an important contribution to the protection against exposure to airborne bio-hazards in indoor environments. This press release only considers air filtration in relation to airborne indoor occurrence of biological weapons. It does not address the exposure to substances outside buildings, nor does it address the exposure to bio-contaminants arising out of surface contact or ingestion. It also has to be noted that the potential benefit provided by IQAir® systems may be intentionally circumvented.

The IQAir® range offers stand-alone room-based filtration systems which can reduce the potential risk of indoor exposure to biological weapons by:

1. filtration of contaminated outdoor air before it enters buildings
2. filtration of indoor air by recirculation
3. filtration of contaminated air from adjacent rooms (e.g. laboratories, mail rooms)
4. containment of airborne contaminants within a specific environment (e.g. mail room)
5. source capture of contaminants at their point of origin

Filtration of contaminated outdoor air

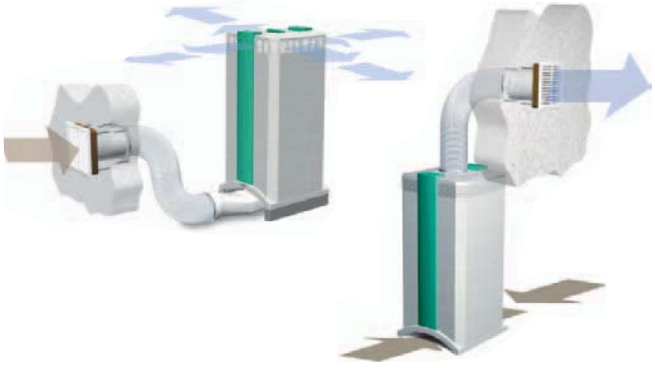
If biological weapons are aerosolised outdoors (e.g. through airplanes, missiles, bombs etc.), buildings may provide shelter from exposure. To reduce the risk of infiltration of contaminated air, the filtration of outdoor air before it enters the indoor environment is a priority. In buildings that do not have forced air ventilation, such as many residential buildings, bio-contaminants could enter indoors through "natural ventilation" such as ventilation openings, gaps around windows and doors, etc.. The most effective way to reduce the risk of infiltration of airborne hazards is to create a positive pressure area by supplying filtered outside air to the indoor environments. A positive pressure build-up can then create a directional airflow from indoors to outdoors, thus reducing the risk of contaminated air being carried indoors by natural ventilation.

Filtration by recirculation of indoor air

In buildings with centralised forced ventilation, the filtration of the forced air stream can help to reduce the presence of airborne bio-hazards and the risk of biological contaminants from being spread from room to room. Thus the filtration of the room air by recirculation can reduce the risk of exposure by reducing the number of airborne particles in the air.

Filtration of contaminated air from adjacent rooms

Should there be an increased risk of exposure to biological contaminants in a specific area within a building (e.g. mail room), adjacent environments can be isolated by creating a positive pressure environment in the adjacent rooms. This reduces the risk of infiltration of airborne biological contaminants from adjacent rooms.



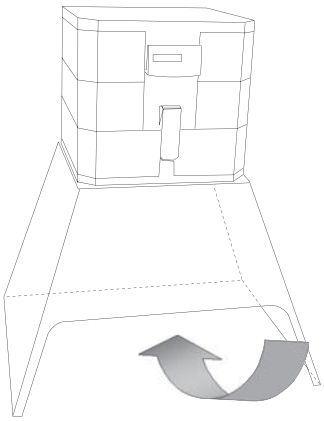
IQAir® systems with InFlow™ & Outflow™ adaptors for the creation of pressure differentials to isolate airborne microorganisms.

Containment of airborne contaminants within a specific environment

Conversely, the risk of contaminated air being spread from a "high-risk" area to adjacent areas can be reduced by creating a negative pressure environment in the

The IQAir® CleanZone H13 in a mailroom setting

"high-risk" area. IQAir® offers pressure ducting adaptors (*Inflow*, *VM InFlow* and *Outflow*) that can be attached to any IQAir ® system to create positive and negative pressure environments. For more information, please refer to the relevant *InFlow* & *OutFlow* technical specifications.



IQAir® CleanZone H13: table-top negative pressure hood system

Source Capture of Airborne Contaminants

The latest development at IQAir® is the *CleanZone™ H13*, an open-fronted table-top negative pressure hood system. An inward flow of room air through the front opening, away from the operator, prevents the escape of airborne pathogens from underneath the hood into the room air. Negative pressure under the hood is created by a powerful fan that draws the air from underneath the hood through a HyperHEPA® (Class H13) filter before exhausting the cleaned air into the room. This table-top hood system can be placed on a horizontal surface (e.g. a work-surface in a laboratory or mail room).

Certified Filtration Efficiency

Whether IQAir® systems are used to reduce leakage of contaminants into buildings or to clean indoor air through recirculation, or as source capture devices, they are capable of retaining airborne particles which include airborne biological weapons, such as anthrax. Both the *IQAir® Cleanroom H13* and the *IQAir® CleanZone™ H13* systems are certified to filter airborne contamination particles which are 0.3 microns in size or larger with a total system efficiency of 99.97% or greater. Classification in accordance with the stringent European HEPA-filter test norm EN1822 verifies that even the smalles airborne particulates, such as viruses are captured with an absolute minimum efficiency of 99.5 %.

Since airborne weapons, such as anthrax bacteria, are approximately 1 to 5 micron in size, the above listed IQAir® systems can filter airborne biological weapons in this size range with an efficiency of greater than 99.97%. This, however, does not mean that the air in a room with an IQAir® device will be 99.97% particle-free, since the reduction of airborne particles depends not only on the system's efficiency, but also on factors which are specific to the indoor environment. These factors include room size, contamination source intensity, type and concentration of the contaminant, airflow patterns and ventilation rates.

It has to be noted that while the risk of exposure to biological contaminants is remote, the exposure to air pollution, through tobacco smoke, traffic and chemicals to millions of individuals is very real. If there is a positive outcome out to the potential threat of biological weapons, it is a heightened public awareness that good air quality should not be taken for granted.

IQAir® is a worldwide leader in providing targeted and localised air cleaning solutions for critical applications. IQAir's fields of application range from residential allergen control to airborne infection control in health-care settings. IQAir® advanced air cleaning systems are designed, engineered and manufactured in Switzerland. They are available through authorised dealers in over 50 countries around the world.

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