

HVAC FILTRATION SYSTEM UPGRADE PROPOSAL

March 2020

**URBAN
MECHANICAL**

PLUMBING — HEATING — HVAC — CONTROLS

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**COVID-19 HVAC RISK MITIGATION PROPOSAL THROUGH
HVAC FILTRATION SYSTEM UPGRADES**

FOR:

***RETIREMENT CARE, NURSING HOMES, MULTI RESIDENTIAL
FACILITIES AFFECTED BY COVID-19***

COVERING:

HVAC

COVID-19 is a Pandemic in the world today, with rising cases each day it is very important that we as a society work together to not only look for a way to cure viral spread but also to prevent it. Spread of the virus not only can be transferred via surface contact but also through aerosol droplets that make the virus active and air borne for up to three hours. This means that spread could potentially occur within hours through the HVAC recirculation system even if strict isolation is implemented.

“The New England Journal of Medicine. The scientists found that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was detectable in aerosols for up to three hours, up to four hours on copper, up to 24 hours on cardboard and up to two to three days on plastic and stainless steel. The results provide key information about the stability of SARS-CoV-2, which causes COVID-19 disease, and suggests that people may acquire the virus through the air and after touching contaminated objects.” (Pekoc, K. (2020, March 17). Retrieved March 20, 2020, from <https://www.niaid.nih.gov/news-events/new-coronavirus-stable-hours-surfaces>).

AIR FILTRATION

Air purification starts with filtration of the air via specially developed filters. These filters utilize tested and approved configuration of Six alternate Polarity layers of electrically charged nylon media and ÆGIS Microbe Shield Technology. filters are capable of capturing airborne particles down to 0.3 microns in size and smaller.

These filters are able to Destroy, kill an average of 86.5% of microorganisms in One Single pass of Air through this specially developed Air Filter. A study undertaken by St.Luke’s Medical Center in Phoenix, Arizona determined this average through a number of controlled tests and scientific studies.

**Destroys, Kills on Contact
an Average of
86.5%**

Using a laser particle counter set at 1.0 micron sensitivity, it was determined that the ÆGIS Microbe Shield treated filter passed fewer particles (196/m3) compared to the untreated filter, which passed four times as many (808/m3).

Whole House Filtration

These that are

WASHABLE - RE-USABLE

Contains:

- 5 Layers of Electrically Charged Filtration Medias.
- 2 Layers of P.V.C. coated protection grid.
- Heavy Weight aluminum extruded frame.
- Convenient nickel plated pull lever for easy removal.
- Solid State Filter Medias will not matt, clog, pile line or degrade Engineered to stay inert and remain intact - washes clean every time, year after year.

Rated over 80% Efficiency Dust Stoppage

Ultra low air flow restriction .08 W.G.

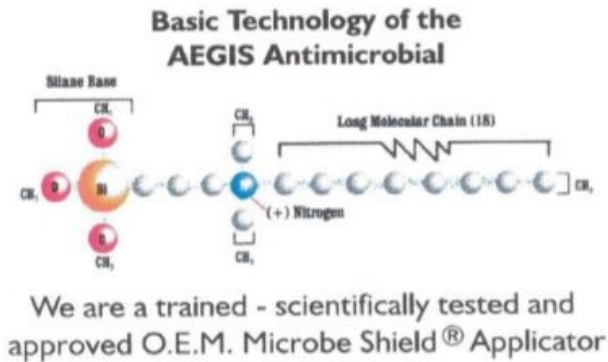
Treated with AEGIS MICROBE SHIELD™

Produces NO O³ toxic ozone

Captures and Holds Dust like a Magnet!

Approved For All H.V.A.C. Including High Efficiency Systems.
Superior Advantage With Ultra Low Restriction Plus Antimicrobial Superior Health Protection Benefits.
Saves Your Money With Wash Re-Use Advantage And Reducing Energy Consumption Benefits.

Air filters in commercial buildings and residences are an essential component in establishing and maintaining indoor environmental quality. Air filters can be a barrier to microorganisms and, at the same time, can be an amplification site for microbial growth. Test data from laboratory and field evaluations, as presented and referenced in this report, show clearly the utility and appropriateness of the AEGIS Microbe Shield Technology as part of air filtration systems.



AEGIS Microbe shield. This technology is based on a unique polymer, 3-trimethoxy silyl propyl dimethyl ammonium chloride. When applied to the filter surface, this polymer acts as an additional antimicrobial bonding surface for contaminants to stick to filtering the passing air so effectively.

The ability of this filter to reduce the test organism under soiled conditions supports the theoretical consideration of the flow-through of microorganisms seeking cleaner areas of the filter where contact with the treated surfaces can occur. This data also supports the performance of the antimicrobial as a chemical and physical entity. The radius of influence of the cationic and oleophilic AEGIS Microbe shield technology favours contact with the anionic and lipid outer layer of microorganisms, hence contact and kill.

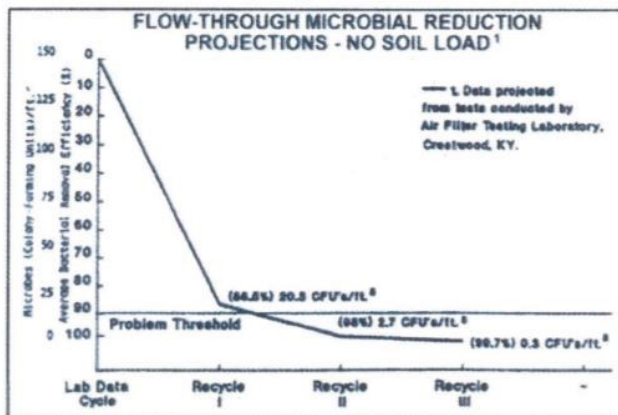


Fig. 5. Flow-through microbial reduction projections – no soil load.

AEM 5700 solutions and AEM 5700 treated surfaces show positive antiviral activity against a range of viral types. These results are encouraging regarding the utility of this treatment at reducing doses of viruses in a variety of applications.

Installation of these custom Air filters will provide in our opinion an extra frontline layer of risk mitigation to those who are most at risk. The bottom line is, taking the time to keep a clean environment with fresh, healthy air can go a long way in preventing and alleviating the effects of disease and illness. As we move into the unknown "flu season", keep your air pristine will do wonders for your health and that of your family. Let's not only protect ourselves by decontamination of the surfaces we are in contact with but also the air we breathe. Although AEGIS Microbe Shield has not been specifically tested (testing underway) with COVID-19 based on positive test results with other similar viruses SARS, H1N1, H5N1 it is the best and only Health Canada registered, bonding, antimicrobial surface treatment approved for commercial applications.

"I think it it's incumbent on all of us to do whatever we can and to go over and above what's needed in order to ensure that we keep our workforce healthy as well as our customers healthy." Anne Marie Aikins, spokesperson for Metrolinx Transit

Reference materials used in above statements;

<https://www.prlog.org/10050867-aegis-microbe-shield-technology-effective-against-the-deadly-sars-and-h5n1-virus.html>

<https://www.prlog.org/10229686-reduce-the-risk-of-viral-infection-to-save-human-health-and-global-economy-says-aegis-asia-singapore.html#>

<https://www.prlog.org/10229721-follow-advisory-on-workplace-measures-to-tackle-influenza-h1n12009-says-aegis-asia-singapore.html#>

<https://www.niaid.nih.gov/news-events/new-coronavirus-stable-hours-surfaces>

<https://www.cbc.ca/news/canada/toronto/ttc-go-transit-metrolinx-cleaning-disinfecting-vehicles-coronavirus-outbreak-1.5484659>

<https://www.aegiasia.com/wp-content/uploads/aegis-asia-introduces-two-forward-defense-mechanisms-against-bird-flu-h5n1.pdf>

<https://www.aegiasia.com/wp-content/uploads/NASA-tests-validates-AEGIS-efficacy-treated-fabric-flying-colors.pdf>

<https://www.aegiasia.com/wp-content/uploads/aegis-treated-air-filter-efficacy-results.pdf>

<https://www.hamilton.ca/government-information/news-centre/news-releases/hsr-and-darts-service-update>

<https://www.kasteel.ca/wp-content/uploads/2017/09/Claims-Substantiations.pdf>