



IAQ – COVID19 GUIDELINES FOR FAN COILS



FANCOIL AND TERMINAL UNITS GENERAL RECOMMENDATIONS

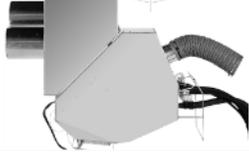
There is no complete and unique solution for terminal units , it depends on the type of pollutant. CARRIER advice to keep the current systems working if there are cooling or heating needs , and rely on the existing filtration systems to contribute to keep the acceptable IAQ standards . The recycling operation of fan coil units reduces the concentration of fine particles inside the rooms. Even if the filter does not capture 100% of the particles in one pass, a high mixing rate in a room makes it possible to multiply the number of air passages in the unit, and therefore in the filters, and to increase the number of particles retained by them.

STANDARD EFFICIENCY FILTERS	<ul style="list-style-type: none"> Filters ePM2.5, ePM1 are useful to reduce particulate matter concentration although they have a marginal efficiency on bacteriological pollution.
VENTILATION & FRESH AIR CONTROL	<p>Best solution to reduce virus concentration is the air renovation & the introduction of fresh air , that can be handled through :</p> <ul style="list-style-type: none"> Mechanical fresh air inlet spigot to supply fresh air treated by an air handling unit. Fresh air damper with modulation of the airflow thanks to a CO2 sensor or to a fixed set point set by the user.

ANSWERS REGARDING ALTERNATIVE TECHNOLOGIES AGAINST COVID 19 IN FAN COIL UNITS

HEPA (High Efficiency Particulate Air) FILTERS	<ul style="list-style-type: none"> HEPA filters cannot be installed in fan coil units due to high pressure drop and high energy consumption. These filters are mainly used in air handling units.
CARBON FILTER	<ul style="list-style-type: none"> Carbon filters are useful to reduce chemical pollution (VOC), they have no effect in virus reduction.
UV LAMPS	<ul style="list-style-type: none"> These technology does not guarantee virus total elimination (depends on the type of virus and the environmental conditions). Additional tests are required to define : <ol style="list-style-type: none"> Decay rate : virus elimination depends on the UV-C dose (exposure time x UV-C power) Number of UV-C lamps required Effectiveness rate of air recirculation UV-C rays are dangerous for the eye, and also for skin; they might cause cancer in case of long term exposure. High maintenance costs (replacement) : life time of this lamp is around 18000 h Additional energy costs are generated due to the electrical consumption of the UV bulbs.
PHOTOCATALYSIS	<ul style="list-style-type: none"> This technology degrades mainly chemical pollutants. Molecules are broken in new (smaller) molecules. Therefore we do not control the production of these molecules and their toxicity; this depends on the composition of the air upstream.

CARRIER FANCOIL IAQ SOLUTIONS

42GW cassette	<p><u>Standard filtration</u> :</p> <p>G1 filtration (EN 779) made in polypropylene</p> <p><u>On demand</u> : G3 filter (EN 779)</p>	
42KY Cassette	<p><u>Standard filtration</u> : G3 filter (EN 779)</p>	
42NC/ND/NI/NIU	<p><u>Standard filtration</u> : G3 filter (EN 779)</p>	
42NH/ NL ducted	<p><u>Filtration options:</u></p> <ul style="list-style-type: none"> • G1 filter(EN 779) • G3 filter (EN 779) • Filter M5 (EN 779) (only for 42 NH) 	
42EP slim ducted	<p><u>Standard filtration</u> : G3 filter (EN 779)</p>	
42BJ ducted	<p><u>Filtration options:</u></p> <ul style="list-style-type: none"> • M5 filtration (EN 779) (standard) • M6 filtration (EN 779) 	
42GR ducted	<p><u>Filtration options:</u></p> <ul style="list-style-type: none"> • M5 filter (EN 779) (standard) • M6 filter (EN 779) • F7 filter (EN 779) 	
Fresh air valve with CO2 sensors	<p>Modulation of the fresh air depending on the CO₂ level with action on the fresh air valve fitted on the fan coil (ducted range only).</p>	

SOURCES

- [REHVA COVID-19 Guidance Document \(V2\)](#)
- [World Health Organization: Getting workplaces ready for COVID 19](#)
- [ASHRAE Position Document on Airborne Infectious Diseases, Annual Review of Virology.](#)
- [Eurovent Covid-19 ventilation guidance](#)

