

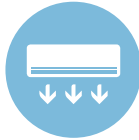


## Airports

# Impact of COVID-19 on Infrastructures

Let's talk aeronautics



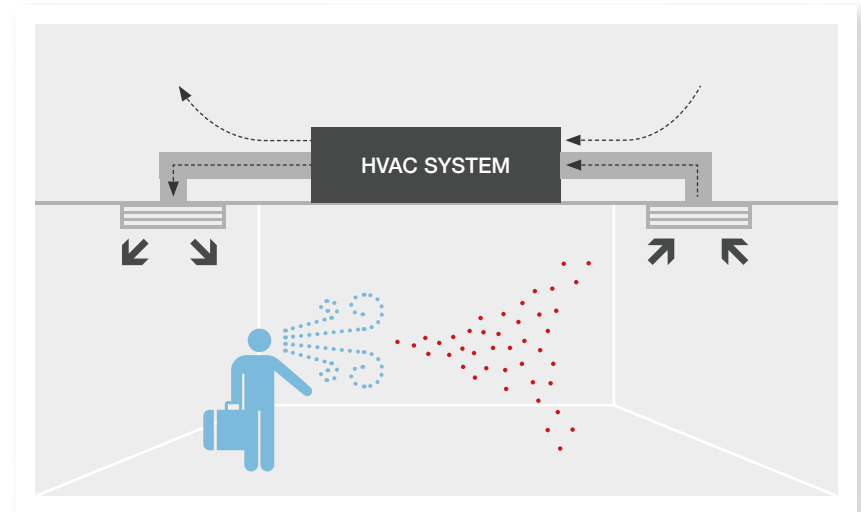


## Changes in HVAC systems



Reconfiguring HVAC systems will play an important role in reducing the risk of COVID-19 transmission. This creates a new scenario in which the nominal design conditions have changed:

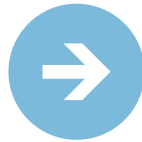
- Ventilation will become a priority
- Filtration of recirculated air must guarantee the elimination of viruses and contaminants
- Increased ventilator pressure loss due to increased filtration must be analyzed
- Heat load associated with passenger capacity will diminish due recommended security distances
- Control system parameters (CO2 level, equipment operating priorities, temperature and relative humidity) must be updated to comply with new interior air quality requirements



### TIP

A initial study of existing HVAC facilities will make it possible to get the most out of the available systems





# Hygiene improvements in electromechanical equipment



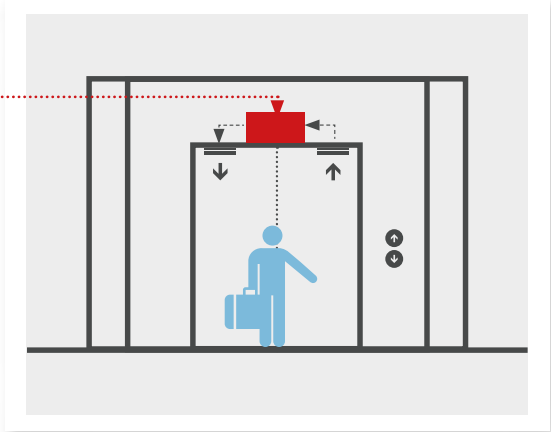
The means of electromechanical transport most used by passengers in the terminal are escalators and travelators; elevators are usually used by passengers with mobility impairment or using baby carriages.

In the case of elevators as well as escalators and travelators it will be advisable to install equipment that improves hygiene in the following ways:

- Purifying interior air with auxiliary equipment installed in the ceiling of the elevator cabin
- Reprogramming the elevator control system to limit the number of people inside the cabin
- Sterilising handrails to decrease the possible spread of virus and bacteria that can remain on surfaces

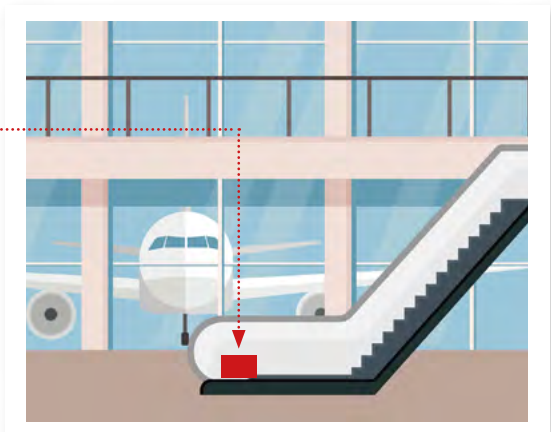
## ELEVATORS

### Air treatment unit



## ESCALATORS

### Disinfection module



Let's talk [aeronautics](#)



# Impact of COVID-19 on airfield pavement



The coronavirus crisis has grounded most of the worldwide fleet of commercial airliners.

Due to the lack of space in the apron areas, some airports are parking these overflow aircraft on runways and taxiways, most of them consisting of asphalt pavement.



● Rigid pavement (concrete) ● Flexible pavement (asphalt)

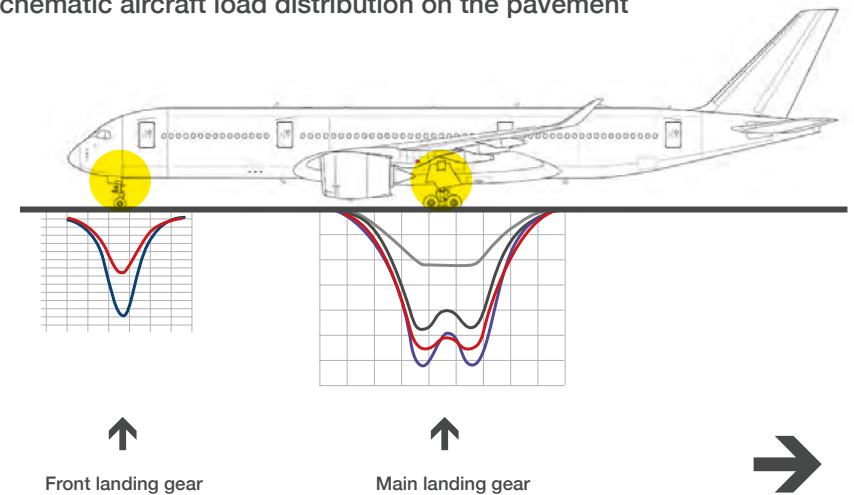


## Is asphalt pavement on runways and taxiways prepared to withstand parked aircraft for a while?

Traditionally, aprons have been built in PQC (concrete) rather than asphalt, for the following reasons:

- Due to its viscoelastic properties, asphalt is more sensitive to the prolonged static loads
- Sensitive to high temperatures
- Likely to deteriorate due to fuel spillages, which could soften the surface course

## Schematic aircraft load distribution on the pavement





# Impact of COVID-19 on airfield pavement



The combined and prolonged effect of the above factors, might lead to pavement deterioration and worsening of its surface characteristics. In order to minimize these effects, actions to preserve airfield pavement should focus on the following:

1. While the pavement is being used for overflow parking, regular monitoring is recommended, to control its current condition and early detection of any defect.
2. Before resuming operations, an audit of the pavement (visual inspection, testing...) should be carried out. The aim is to evaluate the actual impact of this situation on the pavement and to determine whether maintenance works might be required. In addition, other airfield elements will need to be inspected and tuned-up: AGL, paint marking, drainage, excessive growth of vegetation and proliferation of small animals on the airfield strip (FOD risk)...



The airports already carry out regular monitoring and maintenance, as part of their infrastructure maintenance plan. However, due to the current situation, these actions might be re-scheduled.

**Some experts are even considering the re-certification of runway and taxiway pavements used to park aircraft during the COVID-19 pandemic before resuming operations.**





# An enormous challenge for air transport and engineering. What's the next step?



For more information:

[aertec.com/en/aviation-postcovid](https://aertec.com/en/aviation-postcovid)





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