ENERSHIELD AIR BARRIERS

Maintaining Comfort & Environmental Control

Passenger comfort, staff wellbeing and energy savings are all central to airport operations, and the internal environment plays a key role in achieving these. Yet, frequent door use creates a persistent challenge, maintaining thermally stable conditions while keeping external contaminants out.

Enershield Air Barriers create a “virtual door” by re-circulating internal facility air and forcing it across an opening to create a significant seal over open doorways up to 11.5m high. The seal separates the atmospheres on either side and reduces the transfer of the following:

Temperature & Humidity
Proven to reduce heat, cold and humidity transfer by up to 90%

Airborne Contaminants
Reduce the ingress of particulate matter (PM10, PM2.5, PM1, ultrafine) dust and other contaminants by up to 80%

Fumes and Chemical Contaminants
Can improve indoor air quality and reduce the transfer of VOC’s, fumes and other gases

Flying Insects
Reduce flying insect ingress by up to 75%

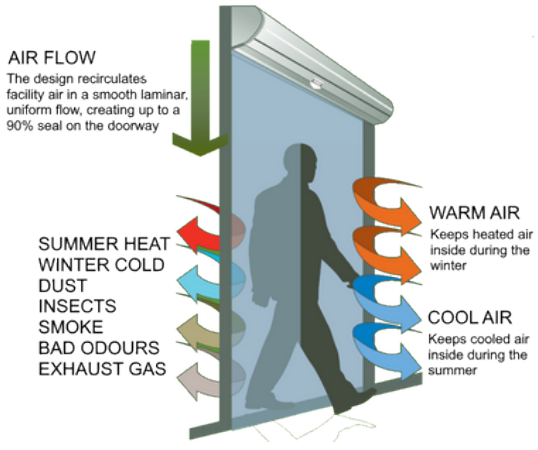
Indoor Environmental Control
Improved passenger experience & staff wellbeing

Sustainability
Reduce energy consumption & CO2e emissions

Delivering Operational Stability

Enershield Air Barriers solve real-world operational challenges across airport terminals and ground handling areas reducing the ingress of hot and cold outdoor air, humidity, dust, fumes,and insects through high-traffic doorways.

The result is greater energy efficiency, enhanced comfort, reliable environmental control for continuous operations, and a healthier, more positive experience for both staff and passengers.



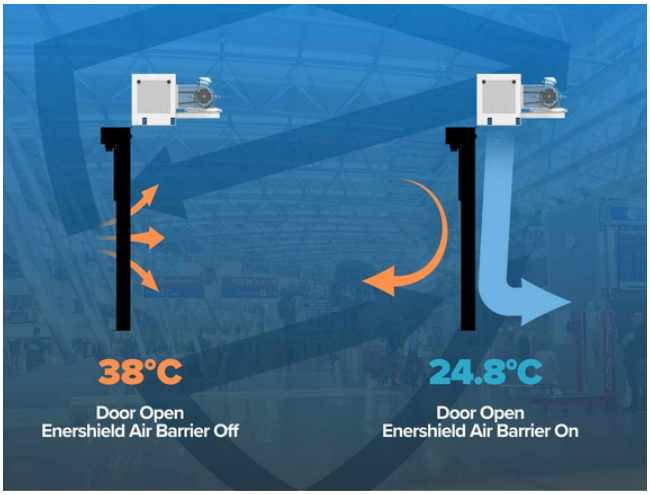
Transforming Airport Comfort & Efficiency with Enershield Air Barriers

The Client

A major international airport in the Middle East, handling over 87 million passengers annually.

The Challenge

High footfall of passengers through unprotected terminal doors was leading to a substantial energy loss and other environmental issues. Maintaining a stable internal temperature and minimising external contaminant ingress became increasingly difficult especially in hot weather.



The Solution

Enershield Air Barriers were installed across key departure and arrival doorways. Proven to stabilise the thermal environment, decrease energy costs and reduce dust,sand and fly ingress, Enershield Air Barriers work by creating an effective seal on any opening. This seal is achieved by re-circulating facility air at a specific velocity and volume in a smooth laminar flow.

Enershield Air Barriers are specifically designed to combat challenges such as those faced by this international airport, improving the throughput of passengers and providing an energy-saving solution whilst creating a comfortable environment for passengers and staff alike.

The Result

Our technical team measured internal temperatures using a calibrated thermometer placed 2 m inside an open arrivals doorway protected by an Enershield Air Barrier under the following conditions.

- The external temperature at the time of testing was 38°C, with an internal temperature of 22–23.5°C.
- With the air barrier deactivated and the door open, the internal temperature increased to match the outside temperature of 38°C.
- With the air barrier activated and the door open, the internal temperature stabilised at 24.8°C.

In addition, our client reported further benefits, including improved passenger comfort, a reduction in passenger complaints, and a noticeable decrease in the ingress of dust, insects, and other airborne contaminants.