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## CASE STUDY: PERFECT CLIMATE IN THE TERMINAL



Photo: Airport Cologne / Bonn

**PROJECT:**  
Connecting passage between two terminals at the airport Cologne / Bonn

**LOCATION:**  
Cologne, Germany

**COMPLETION:**  
2019

**APPLICATION:**  
Surface cooling

**PRODUCT:**  
aquatherm black system

### CONNECTING CORRIDOR AT THE AIRPORT COLOGNE / BONN EQUIPPED WITH AQUATHERM BLACK SYSTEM

**R**elaxed traveling between Point A and Point B: For Cologne / Bonn Airport, the uncomplicated travel experience of its passengers comes first. One of the airport's most recent construction projects also serves to optimize the travel process.

A new connection between Terminal 1 and Terminal 2 makes it possible for passengers to move between the terminals on the air side without re-checking through security. In addition to a 186-metre passageway area with two stairwells, two new boarding zones were created on approximately 1,000 square metres of usable space, from which passengers can board directly into their aircraft. A special challenge of the project lay in the area of air conditioning.

The new building is architecturally based on the previous airport development and stands out with its large glass surfaces, which allow a view of the runways. This construction requires special attention in the planning.

*"Due to the large glass surfaces, the area heats up quickly. The many people who go through this area every day, do their part," explains Thomas Runkel, authorized representative of the Etgenium GmbH in Königswinter and planner of the construction project.*

That's why he was looking for an effective cooling system that could cover all the cooling requirements. Within the framework of earlier con-

#### THE CHALLENGE

With large glass surfaces and many people, the new connecting corridor between terminals 1 and 2 at Cologne / Bonn Airport becomes uncomfortably warm quickly.

#### THE SOLUTION

With aquatherm black system, effective cooling of the building is achieved, which can be perfectly adapted to the local conditions.



struction projects – for example the residential complex HUF City Living in Montabaur and the refurbishment of the fire brigade guard station of the airport Cologne / Bonn – he had come to know and appreciate the surface heating and cooling system aquatherm black system. That's why he chose the product from aquatherm, which was installed in a perforated metal cassette ceiling and connected to an existing district cooling network.

## COOLING ADJUSTS AT SHORT NOTICE TO CHANGING CONDITIONS

In contrast to conventional cooling systems, aquatherm black system radiates the temperature of the water flowing through black grids made of corrosion-resistant polypropylene. Drafts or dust whirling are excluded by this process and the perceived comfort in the room increases. The system also operates at higher flow temperatures than conventional cooling systems, allowing for particularly efficient and energy efficient operation. In addition, an aquatherm black system can be perfectly adapted to the local conditions.

*“In the corridors and boarding zones, we do not have it consistently, but always intermittently with large crowds to do,” said Runkel. “That’s why we have divided the new building into eleven zones, which are controlled individually. This enables us to adapt the temperature control to the number of people in the short term.”*

Another advantage of the system, which can be incorporated not only in the ceiling, but also in the floor or wall, lies in its low construction height.

*“The new building had strict height limits,” said the planner. “Under the building runs the airport traffic with its large vehicles, above it we left room for future construction projects. The low construction height of aquatherm black system, which amounts to 24.5 millimetres including collectors, mounting rails and connections, was therefore very well suited to the concept.”*

## 1500 GRIDS INSTALLED IN TWO WEEKS

Around 1,500 black grids were precisely inserted into the ceiling within a short period of time.

*“It only took us two weeks to install the entire system on around 1,000 square metres,” explained Roman Münch, Managing Director of Münch Innenausbau in Hambuch, which carried out the installation work.*

This was made possible by the object-specific production, which was carried out in close cooperation with the customer in the main plant of the aquatherm group of companies in Attendorn. Overall, grids in sizes between 240 x 700 mm and 240 x 1,600 mm were mounted. The aquatherm black system was attached to the metal coffered ceilings with the help of mag-nets.

*“This type of fastening has many advantages: The magnets provide a very strong connection between register and metal cassette ceiling and can be mounted not only simply but also quickly” says Alexander Mieden, master heating engineer and employee of Münch Innenausbau.*

The grids were connected to each other with a connecting corrugated pipe and a connecting piece. The corrugated tube allows for flexible connection, while the quick connector with safety clip creates a dense yet detachable connection. 26 manifolds, which were also installed in the ceiling, regulate the water supply.

For the Münch company, the passageway at the airport was one of the first objects in which they worked with the aquatherm black system.

*“The system impressed us with its fast and uncomplicated processing,” says Münch.*

Therefore, two more projects with the black grids are already in planning. And Runkel is also convinced of the system:

*“aquatherm black system works flawlessly, reliably and so far has met my expectations with every construction project.”*



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**aquatherm GmbH**

Biggen 5 | 57439 Attendorn | Germany

Tel.: +49 2722 950 0

Fax: +49 2722 950 100

info@aquatherm.de | www.aquatherm.de