

Case study

ROCKWOOL® passes acoustic test for new Heathrow hotel

Crowne Plaza Hotel, Heathrow





The project

Noise pollution is an inevitable fact of life at busy airports. So, how can hoteliers in these locations minimise the impact of unwanted noise on their guests?

The new Crowne Plaza® London - Heathrow Terminal 4 is leading the way thanks to a pragmatic approach from ROCKWOOL® based on acoustic performance test data.





The challenge

The Crowne Plaza London - Heathrow T4 has operated under a franchise agreement between IHG and Arora Hotels, a division of the Arora Group, since it opened in 2018.

Connected via a convenient air bridge to T4, this is a dual brand hotel of Crowne Plaza and Holiday Inn Express of which Crowne Plaza has 300 bedrooms and Holiday Inn Express has 450 bedrooms. There is also a range of business and meeting facilities, including five meeting rooms, to enable guests to be at their most productive during their stay.

Minimising external noise from the UK's busiest airport, where air transport movements reached a hectic 1,293 every day in 2016, is a major factor in this productivity.

To this end, Grove Developments, the construction division of The Arora Group, who are overseeing the project, challenged ROCKWOOL to achieve a significant R_w 58dB sound reduction within the façade system used on the development.





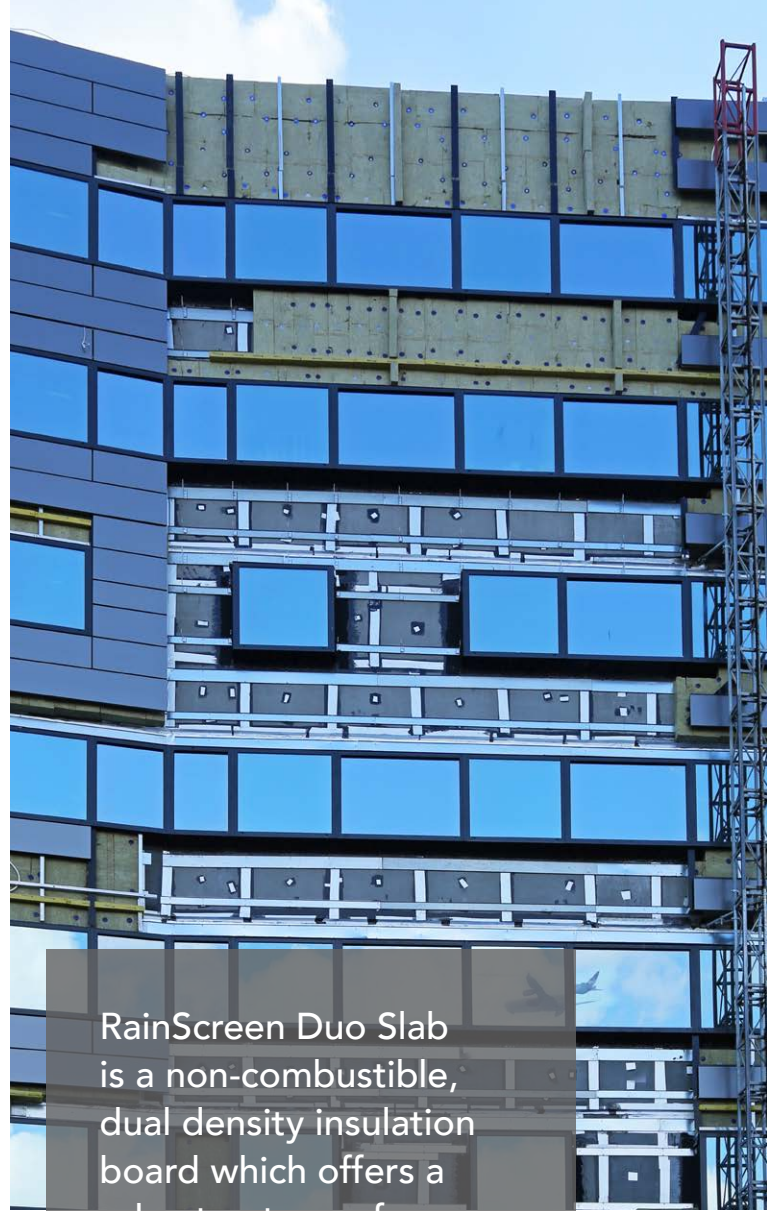
The solution

ROCKWOOL is transforming how rainscreen cladding is specified for its acoustic performance in this type of application with its industry unique, Rainscreen Acoustic Reference Guide.

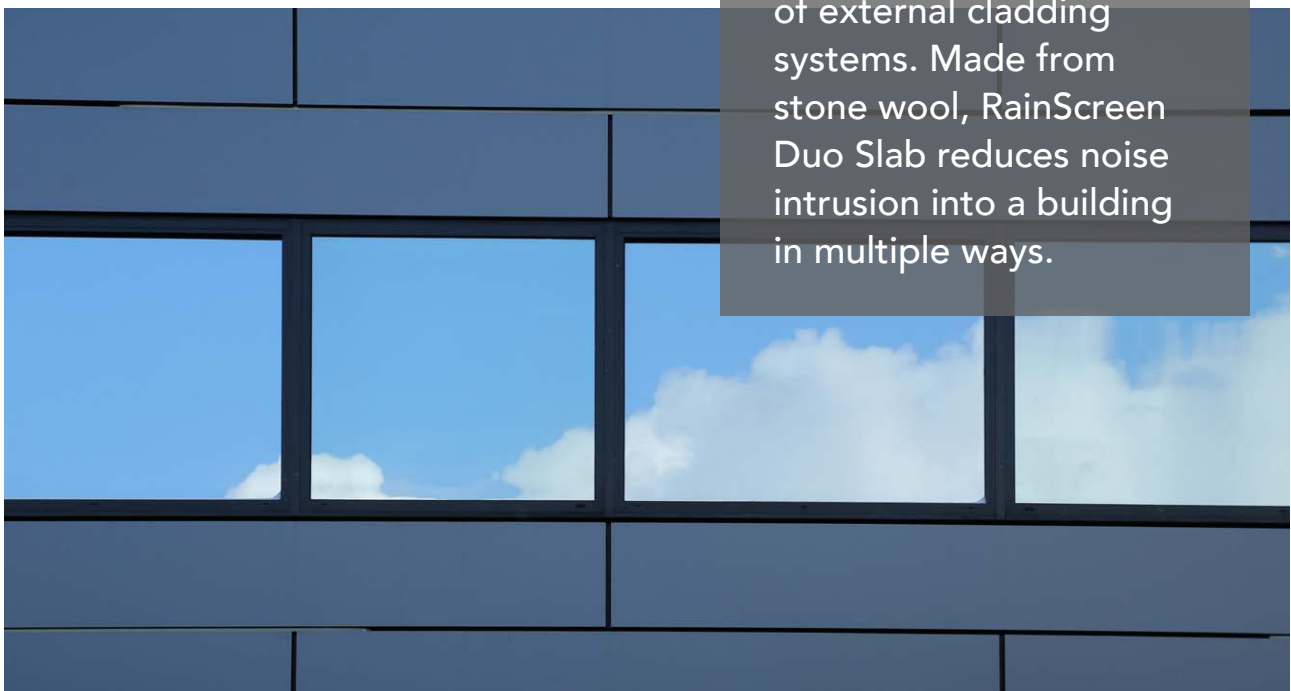
For the first time, this guide gives specifiers reliable acoustic test data on a range of ROCKWOOL products, enabling the right rainscreen cladding solution to be selected with complete confidence that it will meet challenging noise reducing requirements.

Using these test results and working closely with sub-contractor, SD Samuels, ROCKWOOL were able to demonstrate that its 150mm RainScreen Duo Slab® product met the strict acoustic requirements of the Crowne Plaza project. As a result, 5200m² of the product has been specified as rainscreen insulation for installation over the timeline of the build.

As soundwaves try to pass through the air trapped within its wool structure, they get absorbed by friction as the individual fibres are made to move back and forth. In addition, the random orientation of the fibres makes it very difficult for sound to find a path from one side to the other. The top 15mm layer of each RAINSCREEN DUO SLAB® board is manufactured at a higher density than the remainder of the board, changing its acoustic impedance so that sound is reflected at the interface between the two layers.



RainScreen Duo Slab is a non-combustible, dual density insulation board which offers a robust outer surface and a resilient inner face designed for a variety of external cladding systems. Made from stone wool, RainScreen Duo Slab reduces noise intrusion into a building in multiple ways.





RainScreen Duo Slab achieves an A1 Euroclass rating and is therefore non-combustible.

Stone wool insulation has excellent water repellent properties which, together with the minimal number of fixings required, made installation quicker and easier for SD Samuels. At the Crowne Plaza, the product is tightly butt jointed, knitting together to deliver effective thermal insulation at a U-value of 0.20 W/m²K at the same time as it minimises any heat loss that could arise from gaps between insulation boards.

SD Samuels (Special Projects) Limited was the project's Envelope Contractor, working alongside Grove Developments. SD Samuels is proud to have worked on such a prestigious contract, whereby noise reduction levels and spread of flame requirements are of the utmost importance and in this regard is therefore pleased to have had the confidence of ROCKWOOL and its products behind it.

RainScreen Duo Slab achieves an A1 fire classification and is therefore non-combustible.