

## Assessment and certification of rainscreen systems

*Rainscreen walls are commonly used in modern buildings. Weathertightness of walls is commonly specified by performance requirements for air leakage, water penetration and wind resistance. Rainscreens may also require testing to assess impact resistance. This Technical Note explains how these aspects of performance can be assessed and certified.*

### Introduction

The CWCT Standard for systemised building envelopes sets out a performance standard for weathertightness of building envelopes based on testing.

Testing and certification of curtain wall systems has been carried out for many years.

Rainscreen suppliers are often required to provide certificates for their systems to gain acceptance from the specifier or a warranty supplier. A rainscreen wall consists of a back wall and a rainscreen. It will usually have windows as well. The rainscreen, the back wall and the windows are often supplied by different companies and the combination of components will vary from project to project however the performance of the wall depends both on the performance of individual components and on their interaction. Testing of individual components does not therefore give a complete assessment of performance in a wall.

A further complication arises from the fact that a rainscreen does not present a complete barrier to the passage of water and watertightness of the complete wall depends on removal of water passing the rainscreen. Any testing of a rainscreen for watertightness requires a judgement on the acceptability of the amount of water passing the rainscreen and its effect on the components of the wall.

This Technical Note describes the procedures that may be used to demonstrate that a rainscreen system meets the requirements of the CWCT Standard for systemised building envelopes.

### Requirements of CWCT Standard

#### Airtightness

Walls are required to be airtight to maintain a comfortable internal environment and to limit heat loss.

The CWCT Standard describes procedures for testing the airtightness of building envelopes. This is appropriate for curtain walling where the main concern is air leakage through gasket joints which can be reproduced on a test sample.

In a rainscreen wall, airtightness depends on the performance of the back wall, the windows and the interface between the windows and the back wall. In many cases the back wall is constructed as infill between the floors and the seal between the back wall and the floors will also be important. The rainscreen does not contribute to airtightness of the wall.

In the design of a rainscreen wall, the air barrier needs to be identified and the barrier needs to be made continuous at interfaces between different forms of construction. For a masonry wall, the air barrier will normally be the plaster or dry lining on the inside face of the wall. For a stud wall, the air barrier may be sheathing boards on the inside or cavity face of the studs. In this case the joints between the boards must be sealed. The air barrier will be subject to wind load in both positive and negative directions and the air barrier needs to be supported so that it can resist the resulting forces.