Technical Note No 41

Site testing for watertightness

Site testing is frequently used to test the watertightness of windows and cladding as installed, and is specified in Test Methods for Curtain Walling *(CWCT, 1996). This technical note adds further clarification on site testing procedures and equipment and the selection of test method. It should be read in conjunction with Test Methods for Curtain Walling.*

This Technical Note is based on and replaces TN10 first published in January 2000. It incorporates changes following the publication of standard BS EN 13051.

Introduction

Although many cladding components and systems can be tested for watertightness in the laboratory or on a large scale mock-up, these tests neglect a critical issue with watertightness - the impact of *site* workmanship.

The fabricator and installer of a cladding system are relied upon to ensure that the joined surfaces of components are cut straight, gaskets properly fitted, and sealants properly installed. However, the installer is often left to resolve intersections between joints, overcome inaccuracies in the as-built structure and ensure proper sealing to adjacent cladding systems.

For this reason it is often appropriate to test a small part of the installed cladding system, to ensure that fabrication and installation have not in any way reduced the performance of the system, and to check the performance of interfaces with adjacent systems that did not form part of the laboratory test. However, site testing itself can also be poorly applied, and this technical note aims to identify some of the key issues of which the site test specialist and specifier should be aware.

The frame of reference

An important requirement before carrying out site testing is to have a frame of reference - the assessor must know whether certain parts of a component or system are capable of passing the specified test when properly fabricated and installed. This is simple to define when a component or large-scale specimen has been successfully tested in the laboratory. The site testing procedure can then be applied at the laboratory to determine if the test is suitable.
This approach will also generate a second piece of important information - which components or parts of the system will not pass the test. It is known, for example, that the hose test generates a strong jet of water with a penetrating power far in excess of normal driven rain; this test will usually fail joints which are intended to be opened (for example around doors and opening lights of windows), unless a modification to the test procedure is made. It is often possible, on a test mock-up, to modify the parameters for a site hose test to determine the condition under which an opening joint will pass the test with the agreement of all parties.