

# Site Water-Tightness Testing Guidance Technical Update

## Purpose

To confirm that on-site cladding and window details are weather-tight from a design and as-built perspective. Testing will prove satisfactory workmanship in assembling a system, ideally of pre-proven performance. Interfaces are very much the focus of such testing.

## Methods

The industry standard is CWCT TN41 and includes three test methods : Hose test, Spray bar test, Cabinet test.

- Hose testing is for permanently closed joints (not for opening vents or open-jointed cladding). The normal test pressure is 220 +/- 20 KPa, with the water nozzle kept perpendicular to and 300mm from the joint. The nozzle is passed over a 1500mm length 10 times in 5 minutes.
- Spray bar testing is for open-jointed systems and is based on assessing any water ingress which may occur from water run-off as the bar sprays water from the top of the area under test and this flows over the face of the tested area.
- Cabinet testing is more complicated and involves clamping a cabinet to the face of the area to be tested and pressurising or de-pressurising the area. It is much more difficult to set up, particularly when testing at higher levels on a building.

(For details of each test method, refer to CWCT TN41).

## Who Carries out the Testing?

Usually carried out by a consultant and/or a testing body such as Wintech, Vinci (UKAS approved).

## How Often do Failures Occur?

Frequently, but it is not generally considered to be a real problem if the affected area is rectified, ideally on the first re-test. The remedial action should be logged and included in the report. This procedure would be expected to satisfy NHBC. Workmanship is the most common and likely cause of initial failure.

## At What Stage is the Testing Carried Out?

Prior to fitting of internal finishes to enable any areas affected by leaks to be identified. A rainscreen system may be tested prior to installation of the external cladding in order to check for the integrity of the weather seals behind the external finishes.

If an impregnated tape is used as a secondary seal behind the cladding and the test carried out prior to fitting of the panels, it may be agreed by interested parties to carry out the testing initially with reduced water pressures and gradually increased to determine a point of failure at which point, it can be agreed whether this is acceptable.

## Who Decides Locations to be Tested?

A consultant (if involved), architect, main contractor, NHBC inspector.

## 'Frame of Reference'

The CWCT TN41 specification refers to establishing a 'frame of reference' prior to on-site testing. This implies that when site water tightness testing is to be employed, a sample of the façade or single window to be subsequently built/ installed is tested off-site to determine that the detail will be weather-tight provided the workmanship on-site is of the appropriate quality. Any modifications which may be required can then be included at an earlier stage which will save additional expense and time. In reality, this frequently doesn't happen, and the first time the detail is subject to testing is when it is built on-site. In such situations, a pre-test may be arranged by the main contractor to resolve any issues prior to the official UKAS test.

## illbruck Products Which Could Be Subject to Testing

- TP600, ME500, ME501, ME220, BPR range.

## Guidance for Satisfactory Application

Impregnated tapes must be conditioned for 7 - 10 days following application to ensure uniform compression and tightness in the joint. If made aware of a subsequent water tightness test at an earlier stage, recommend a wider tape (minimum 25 mm) in order to achieve more depth into the joint and if possible a tape thickness which will provide more compression.

Areas to be tested involving 'wet' adhesives should also be left for a similar period to ensure full curing. Longer times will be necessary during application in colder weather. All joints should be checked to ensure they are free from gaps, tears and in the case of membranes and jointing tapes, fully bonded to themselves and to the construction substrate. Membrane bonding should be consolidated by rolling with a seam roller.



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