

PORTABLE FIELD WATER-TIGHTNESS TEST EQUIPMENT

Water leakage of external walls in buildings especially windows and joints is one of the major building defects in Singapore. According to survey conducted by BCA, the estimated cost of repair due to water leakage makes up 14% of the overall cost of building repair.

Currently, most new building developments only carry out laboratory tests on the water-tightness of the window system selected by the Architect. However, the laboratory tests cannot detect water leakage due to poor workmanship in the site installation of the window system. It is important that the final building envelope and not just the prototype or mock-up be tested.

Field-testing for water tightness has proved effective in understanding the reasons behind the leakages. However, field-testing posed practical problems and BCA realized that there is a global need for a successful and cost effective water-tightness testing device. Available field tests like the Hose Method is not a good testing method as it cannot stimulate the natural wind and rain conditions essential for water leakage environment.

Current Solutions are:

- Laboratory tests on prototype or mock-up window system selected by the architect.
- Unable to detect water leakage problems due to poor workmanship during installation
- Unable to fulfil industry's needs for tests on the final building envelope instead of prototype/mock-up

Water-Tightness Test Equipment is a:

- Field-test device to simulate the real rain and wind conditions at varying heights.
- Multi-heads water-tightness testing device, using an innovative jet-generation technique, allows it to simulate the true conditions at different floor levels.
- Proven equipment with tests done on more than 2000 samples since December 2002.
- System designed for you with the following benefits:



System Portability,



Ease of deployment,



Low water usage,



& Immediate results for immediate rectifications.

The use of the portable field water-tightness testing device capable of simulating the local rain and wind condition at various floor levels will create the following benefits nationwide:

- i) Cater to the testing needs of taller public and private housing – We are now better able to

meet the testing needs of taller public and private housing that are rising as high as 40 storeys where more critical wind conditions are encountered.

- ii) Increase quality assurance to homeowners – the new device provides multi-heads capability, which means that more windows can be tested simultaneously instead of one at a time for the current device. This coupled with its portability would speed up the testing process and allows for more windows to be tested. BCA has increased the test samples under CONQUAS so as to provide greater assurance to meet the increasing quality demands of homebuyers for watertight homes. This will help to bring us closer towards achieving Singapore's vision of providing world-class housing to Singaporeans.

These are some of the features for the equipment:

- Novel jet generation technology
 - Vary parameters to suit floor height
 - Display unit gives readout of rain conditions
 - Lightweight, just a nozzle head
 - Higher level of operator acceptance
 - Fast and easy to set up and deploy
- Larger number can be tested
Multi-heads capability means all four edges can be tested simultaneously

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