Technical Update 21

Dynamic watertightness test

The CWCT Standard for systemised building envelopes provides for carrying out watertightness tests on curtain walls with either a static test alone or in combination with a dynamic test. The watertightness test is carried out as part of a test sequence and the CWCT Standard defines sequence A which only includes a static watertightness test and sequence B which includes both the static and dynamic watertightness tests. The underlying principle is that a static test is sufficient in sheltered and moderate exposure and that the dynamic test is required for severe exposure. In the Standard it is assumed that the static test will be carried out at higher pressures in more exposed locations and the dynamic test is therefore required where the static test pressure is 600 Pa or greater.

It is now common to test curtain walls at 600 Pa even for fairly sheltered sites and the NHBC requires this level of performance for all curtain walls. The Standard is therefore being amended to relate the requirement for a dynamic test to the design wind pressure. On this basis a dynamic watertightness test is required where the design wind pressure exceeds1800 Pa.

The Clauses of the CWCT Standard which are affected by this change are as follows:

Clause 0.3.2.3 Water penetration test

This currently states:
'For test pressures of 600 Pa or greater a dynamic aero engine test shall be included in the test programme.'
It should be amended to state:
'For design wind pressure greater than 1800 Pa, a dynamic test shall be included in the test programme.'

Clause 3.4.3.2 Dynamic test method

This currently states:
'For building envelopes and slope glazing, a dynamic test is optional for test pressures below 600 Pa and mandatory for test pressures of 600 Pa and above.'
It should be amended to state:
'For building envelopes and slope glazing a dynamic test is optional for design wind pressure of 1800 Pa or less and mandatory for design wind pressure greater than 1800 Pa.'

Clause 8.12 Test sequence

This currently states:
'Standard sequence A shall be used if the peak test pressure for the static water penetration resistance test is less than 600 Pa and if the envelope contains no ventilated cavities. Sequence B shall be used if the peak test pressure is greater than or equal to 600 Pa or the wall contains ventilated cavities.'
It should be amended to state:

‘Standard sequence A shall be used if the design wind pressure is less than or equal to 1800 Pa and the envelope contains no ventilated cavities. Sequence B shall be used if the design wind pressure is greater than 1800 Pa or the wall contains ventilated cavities.’

Clause 8.12.1 Standard sequence A

This currently states:
‘Sequence of testing for water penetration resistance, test pressure less than 600 Pa:’
It should be amended to state:
‘Sequence of testing for design wind pressure less than or equal to 1800 Pa:’

Clause 8.12.2 Standard sequence B

This currently states
‘Sequence of testing for water penetration resistance test pressure greater than or equal to 600 Pa.’
It should be amended to state:
‘Sequence of testing for design wind pressure greater than 1800 Pa:’