

Wind resistance - displacement at supports

Clauses 3.5.2.12 and 3.6.2.3 of the CWCT Standard for Systemised Building Envelopes concern the displacement of the curtain wall framing members at points of support under test wind loads. Clause 3.5.2.12 relates to the serviceability test and clause 3.6.2.3 relates to the safety test. This Technical Update amends these clauses.

Clause 3.5.2.12 states:

Displacement of framing members at points of support shall be minimised and shall be less than 2mm taken as the difference between the position under peak positive load and peak negative load.

This requirement was introduced to maintain consistency with the European curtain wall standard, EN13830. EN 13116 which gives performance requirements for resistance to wind load expresses this requirement in the following way:

- *Frontal displacement of fixings of framing members at their connections to the building structure or other structural components shall be limited to less than 1 mm and this shall be allowed as residual deformation.*
- *As this displacement is allowed under both positive and negative design loads, then the limit shall be taken from an assessed neutral position.*

The requirement of the CWCT Standard is difficult to satisfy and the basis for the requirement has been reviewed. It is considered that the main requirement is to prevent chatter arising from any slack in the connection. Elastic displacements that are fully recoverable on unloading are of lesser concern. Clause 3.5.2.12 is therefore revised as follows:

Displacement of framing members at points of support shall be minimised and shall be less than 2mm taken as the difference between the position immediately after removal of the peak positive load and the position immediately after removal of the peak negative load.

Clause 3.6.2.3 states:

Displacement of framing members at supports shall not exceed 3mm taken as the difference between the position under peak positive load and peak negative load.

There is no corresponding requirement in the European curtain wall standard and this clause is deleted.